

BIHAR

POLICY OPTIONS FOR PARTICIPATORY IRRIGATION MANAGEMENT

**Farmer Organisations and
Organisational and Procedural Changes**

WALMI

**WATER AND LAND MANAGEMENT
INSTITUTE, PATNA**

in collaboration with

ISPAN

**IRRIGATION SUPPORT PROJECT
FOR ASIA AND THE NEAR EAST**

Sponsored by the U.S. Agency for International Development

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October 1994

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EXECUTIVE SUMMARY

According to the National Water Policy of 1987, efforts should be made to involve farmers in various aspects of management of irrigation systems, particularly in water distribution and the collection of water rates. As elsewhere in India, this broadstroke policy has not yet led to a concrete plan for the implementation of participatory irrigation management in Bihar.

What is needed is a strategy for organising farmers into sustainable farmer organizations, moving and motivating the irrigation bureaucracy through changes in operational and procedural guidelines and staff training, and taking supporting measures for the policy objectives to be translated into programmes on the ground. To move that process along, this report presents and reviews experiences in Bihar in creating and supporting farmer organizations and introducing organisational and procedural changes in the line departments that should promote implementation of that policy.

Experiences with Farmer Organisation

The Bihar experience and observations are based on the four action research projects in the major irrigation commands under Sone, Gandak and Badua systems. Direct observation and the secondary data also became available in respect of CADA, state tubewells and NGO in managing group tubewell schemes. This material provides ample scope for working out strategies to implement the objectives of state policy towards effective farmers collaboration. Some of the more important guidelines follow:

FOs hold immense promise for improving performance of irrigated systems and are waiting to be constructively utilised.

The jurisdiction of farmers organisation should not be imposed but be allowed to be settled by the farmers themselves. The farmers perception of the area for management control is based on the location of the problem they face. They found the control of head regulator of the distributary necessary for improving systems performance down below. That judgement should be acceptable.

The organisational task and its burden on government functionaries can be substantially reduced if farmers themselves undertake to organise FO. This can be facilitated by macro to micro approach, taking the distributary as the macro level due to the farmers regular interaction in this system with ID functionaries. Once leadership at that level emerges, it can undertake organisation building at lower

levels of the sub-distributary/minor and the village with understanding and less effort in a much shorter period than anyone else.

The functions of the FO should not be predetermined but should evolve as need for performing a task emerges. In one system, operations could be the starting point since it was causing the main problem; in another it could be desilting maintenance and repairs for early visibility of the results. Once the availability of water is improved agriculture functions will engage their efforts. The self evolving process will simultaneously facilitate capability building, resource mobilisation and, establishing necessary linkages.

The task of FO intervention being approached with the twin objective of system improvement and resource generation, promises of prior system updating by government will be its negation. Resources for system maintenance must come from within the system and as part of resource mobilisation through a share in the water rate as also through additional measures of getting resource in cash and kind. This, additionally, generates a sense of ownership and a stake in the system.

A formal legal status for FO gives it access to assets and services and provides it with bargaining power with the government and other agencies. However, the process of formalisation should be approached cautiously and necessary lead time should be allowed to lapse between the initiation of the process and the formal management transfer. The process of organising the product and resulting social change have to move together.

The issues in replicability and sustainability need to be closely examined in terms of systems involved, area involved, socioeconomic groups involved, cropping pattern involved and diversity in approaches should be fully recognised. The sustainability in time is as much important as in the quality of performance.

The present irrigation structure, functions of the irrigation hierarchies and, their procedure of work do offer some resistance to a change over to farmer managed systems. Even simple changes take frustratingly long time. An approach to change in this sphere making the line department users-organisation friendly is the necessary pre-condition for a sustainable programme of farmers managed irrigation system.

The direction of work undertaken is right and the outcome is positive. It requires a greater thrust for the process to be speeded up and benefits to be stabilised. Bihar's shortage of financial resources can be converted into an opportunity for FO management through internal resource mobilisation. This opportunity should not be lost.

Lessons Learned

The following lessons indicate important conclusions from this review and assessment of efforts to organise FOs in Bihar:

Farmer Organisations

FO efforts create a relationship of trust and mutual support between ID functionaries and farmers and facilitate solution of problems in operation and maintenance.

Institutional mechanism for performance evaluation can facilitate emergence of competent leaders as well as their replacement.

Early emergence of an ad hoc macro level farmer organisation can accelerate the process of farmers themselves organising farmers at the micro/village level.

Frequent and intense interaction between VLC and DLC can help invigorate the functioning of the FOs.

FO capability building through informal involvement in operation and maintenance can help improve system performance and thereby accelerate the process of formalisation.

Increased access to water for the lower reaches through FO involvement can help raise the level of confidence in the organisation.

Awareness through FO activities tends to facilitate reduction in damages to physical distribution infrastructure.

The expansion of WALMI's role can help evolve newer approaches and methodologies for FO, OPC, and turnover.

Replicability can work only if specific conditions of systems have comparability.

Improved finances for the system is key to sustainability and can be facilitated by empowerment of the FO.

Organisational and Procedural Changes

A clear cut administrative directive as a follow up of the national water policy and state policy on FO involvement can remove doubts regarding commitment to that policy.

Restructuring of the administration of the minor distribution system can help in facilitating better service.

Proper changes in rules and procedures for involving voluntary agencies in FO formation as well as for taking help of the FOs in physical repair and maintenance with government funding can help in expediting the turnover.

Proper maintenance and repair of the canal system can be facilitated by change in budgeting, fund allocating and tendering procedures, helping in utilisation of the limited time of canal closure for such MR works.

FO promotion efforts can be accelerated if plan funds are available.

An implementation infrastructure for the irrigation sector can improve bureaucratic commitment to FO empowerment.

Recommendations

These recommendations emerge from the experiences and the lessons learned in Bihar. They seek to promote the objectives of the national and state water policies and accelerate their implementation.

FO Promotion and Capacity-Building

A programme for FO promotion should be expedited by the state government.

The macro-to-micro process of formalizing a two-tiered FO should be adopted in the state for FO promotion and creation.

The boundaries of the FO should coincide with that part of the irrigation system which has the most serious water distribution problems.

Locally evolved leadership should be recognised and supported by the line agencies.

FOs should have a broad mandate of responsibilities and activities, although they are likely to focus initially on water management.

Resource mobilization should be one of the first tasks of an FO.

Organisational and Procedural Changes

Registration of FOs under the Societies Registration Act should be accepted by the line department.

Administrative changes in line agency operation are inescapable and should be undertaken.

The government should earmark budget provisions for accelerating the pace of FO activities.

The government should finalise a policy for the transfer of management responsibilities in irrigation management to FOs.

The government should recognise the role of NGOs for promoting and implementing FO-related policies.

Support Services for FO Promotion and Performance

Technical and management support for FOs from the line agencies should be ensured.

Training modules for improving the capabilities of the FO and line agencies should be developed for use.

The WALMI should be strengthened and expanded in order to meet an anticipated increased demand for training.

The WALMI and CADA should be reoriented to their expected new roles and requirements.

A problem-oriented action research programme should become an integral part of the irrigation administration of the state.

Next Steps

From the rather lengthy list of recommendations above, the following indicate immediate actions required by the government to expand and strengthen participatory irrigation management in the state:

The government should establish a priority agenda to expand the area of FO managed irrigation system.

A state level steering committee should be formed with the chief secretary as the chairman to oversee implementation of the priorities and undertake further supportive measures. Three departments working in irrigation development and management will facilitate securing of the needed thrust.

Since Bihar is still in the initial stages of participatory irrigation management, additional pilot projects should be initiated to cover the different kinds of systems and different agroclimatic sub-zones in the state. This is to be done with a sense of urgency to avoid the discontinuity these efforts have suffered in the past.

ACRONYMS AND TERMS

| | |
|-----------|---|
| AFC | Agricultural Finance Consultants |
| ARP | Action Research Programme |
| BHALCO | Bihar Hill Area Lift Irrigation Corporation |
| CAD | Command Area Development |
| CADA | Command Area Development Authority |
| CAPART | Council for Advancement of Peoples' Action and Technology |
| chak | Land covered by an outlet of one cusec |
| Dalpati | Group Leader of Group Tubewell Members |
| DANIDA | Danish International Development Agency |
| DLC | Distributary Level Committee |
| FFHC | Freedom from Hunger Campaign India |
| FO | Farmer Organisation |
| GCA | Gross Command Area |
| GOB | Government of Bihar |
| HRD | Human Resource Development |
| HYV | High Yield Variety |
| ID | Irrigation Department |
| IFFCO | Indian Farmers Fertiliser Cooperative - a Cooperative sector fertilizer industry |
| ISPAN | Irrigation Support Project for Asia and the Near East |
| IR | Indian Rupee (US\$1=IR31) |
| kharif | Monsoon cropping season |
| lakh | One hundred thousand |
| LI | Lift Irrigation |
| MI | Minor Irrigation |
| MOA | Memorandum of Association |
| MOU | Memorandum of Understanding |
| MR | Maintenance and Rehabilitation |
| NGO | Nongovernmental Organisation |
| O&M | Operation and Maintenance |
| OFD | On Farm Development |
| OPC | Organisational and Procedural Changes |
| panchayat | Village level body for administration and development |
| PADI | Peoples Action for Development (India), formed by converting FFHC in this registered body under Societies Registration Act. |
| PRI | Panchayati Raj Institutions |
| TO | Turnover |
| USAID | U.S. Agency for International Development |
| VASFA | Vaishali Area Small Farmers Association |
| VLC | Village Level Committee |

| | |
|------------|---|
| Vyasthapak | Organiser of the Tubewell Irrigation |
| WALMI | Water and Land Management Institute |
| WRD | Water Resources Department |
| WRM&T | Water Resources Management and Training Project |

Chapter 1

BACKGROUND

Introduction

Bihar presently has developed major and medium irrigation systems with design potentials of almost 2.8 million hectares. Minor systems, including groundwater, cover 4.8 million hectares. Crop production in the state has not, however, shown commensurate results. Bihar was one of the states selected for an intensive agriculture district programme in the early sixties with Ford Foundation support. Introduction of higher technology in irrigated conditions was an important objective and then Sahabad district falling in the Sone system command was the benefitted district. Since then, efforts to improve productivity of crops from irrigated area have not slackened. The less than expected success can be ascribed partly to scanty attention given to grassroot management of irrigation water.

The administration of irrigation systems has so far been confined to supply management. The Irrigation Department (ID) has made arrangements to open canals and facilitate the release of water. It has also been undertaking construction interventions to secure the conveyance of water. This function has been performed in isolation from the water requirements of farmers. The cropping diversification or spread of a high yield variety (HYV) programme in the state has not been commensurate with the availability of irrigation.

One important component has been the changing parameters of irrigation potential. The government system assumed the responsibility to undertake construction of water courses and appropriate outlets to cover smaller chaks for more assured crop responsive field delivery. Demand management was crucially added to conveyance administration in irrigation policy, but the promise has not so far been converted into actual performance.

The Command Area Development (CAD) programme was designed to manage this marriage. Its objective was to bridge the gap between irrigation potential created and its actual utilisation, to improve the infrastructure for intensive cropping through on-farm development (OFD) activities, to upgrade the technology of irrigated agriculture for progressively higher levels of crop productivity and to enlist active collaboration of farmers towards these objectives. The CAD programme was designed and introduced by agricultural scientists and administrators. It was taken over by the central Ministry of Water Resources in early eighties. However, even though productivity successes were achieved to some extent, other objectives failed to receive due attention. The OFD programme became the more visible outcome of CAD activity. CADA

added micro level construction orientation to the conveyance system construction outlook which had stifled water demand management.

The programme launched a more explicit pilot project of farmers organisation in support of irrigated agriculture from 1985. FOs were formed, mostly under state co-operative laws by the Command Area Development Authority (CADA). A subsidy programme for three years to support this institutional intervention was also introduced. The programme first covered outlet level organisation, it was extended later to minor levels. The coverage remained negligible. The fact that ID continued to control the system and CADA was administered by another department of government might have only a small share in this failure since ID was represented in CADA. The failure of CADA to address the basic objective to achieve a balance between supply and demand of water for improved performance of irrigated agriculture was rooted, perhaps, in the apathy of farmers. The programme could not harness the human resources through effective farmers organisation having a dominant say in water management.

In the eighties, a lot of attention and resources to human resource development (HRD) were devoted to improved performance. The USAID-funded Water Resources Management and Training Project (WRM&T) contributed to this effort. World Bank, and USAID also contributed to the setting up of the Water and Land Management Institute (WALMI) to undertake this task. WALMI, Patna developed training programmes. It also took up action research programme (ARP) to study and diagnose problems in the field. Bihar WALMI had, however, a very modest programme due to state's financial problems. Even so, it acted enthusiastically to execute ARP, in which applied research-oriented interventions were added as a component in systems management.

This component was supported since December 1992 by the Irrigation Support Project for Asia and the Near East (ISPAN). The programme has contributed to the knowledge on the performance of FOs in terms of their organisation and operation, organisational and procedural changes in irrigation administration at the level of a distributary, and HRD needs. These experiences include both non-governmental organisation (NGO) programmes for the last two decades and CADA efforts since the early eighties.

Bihar occupies an important position in Indian irrigation. The state contributes about 13 percent of irrigation from all sources and 16 percent to canal irrigation. Ninety percent of the 7.71 million hectares under crops is still devoted to foodgrains. Rural dependency at 81 percent is almost the highest among the states of India, and the only state to record an increase between 1981 and 1991. Irrigated land has, therefore, to contribute much more to improve the incomes of rural people and provide them jobs. Organising and

developing the local manpower in the task is important. Accordingly, the Government of Bihar has set the following objectives for this report:

- a policy framework that can facilitate FOs in irrigation management and their sustainability
- the response of the line department to a participatory management with FOs for increasing the efficiency of water use and productivity of crops
- the willingness of farmers to organise or improving irrigation management and the conditions precedent for management transfer of an appropriate irrigation system to them
- prioritising the lessons of the state experience with FOs and the emerging guidelines for a more active collaboration between government organisation and FOs
- providing outlines of an action plan to build on the positive results and the lessons learned so far

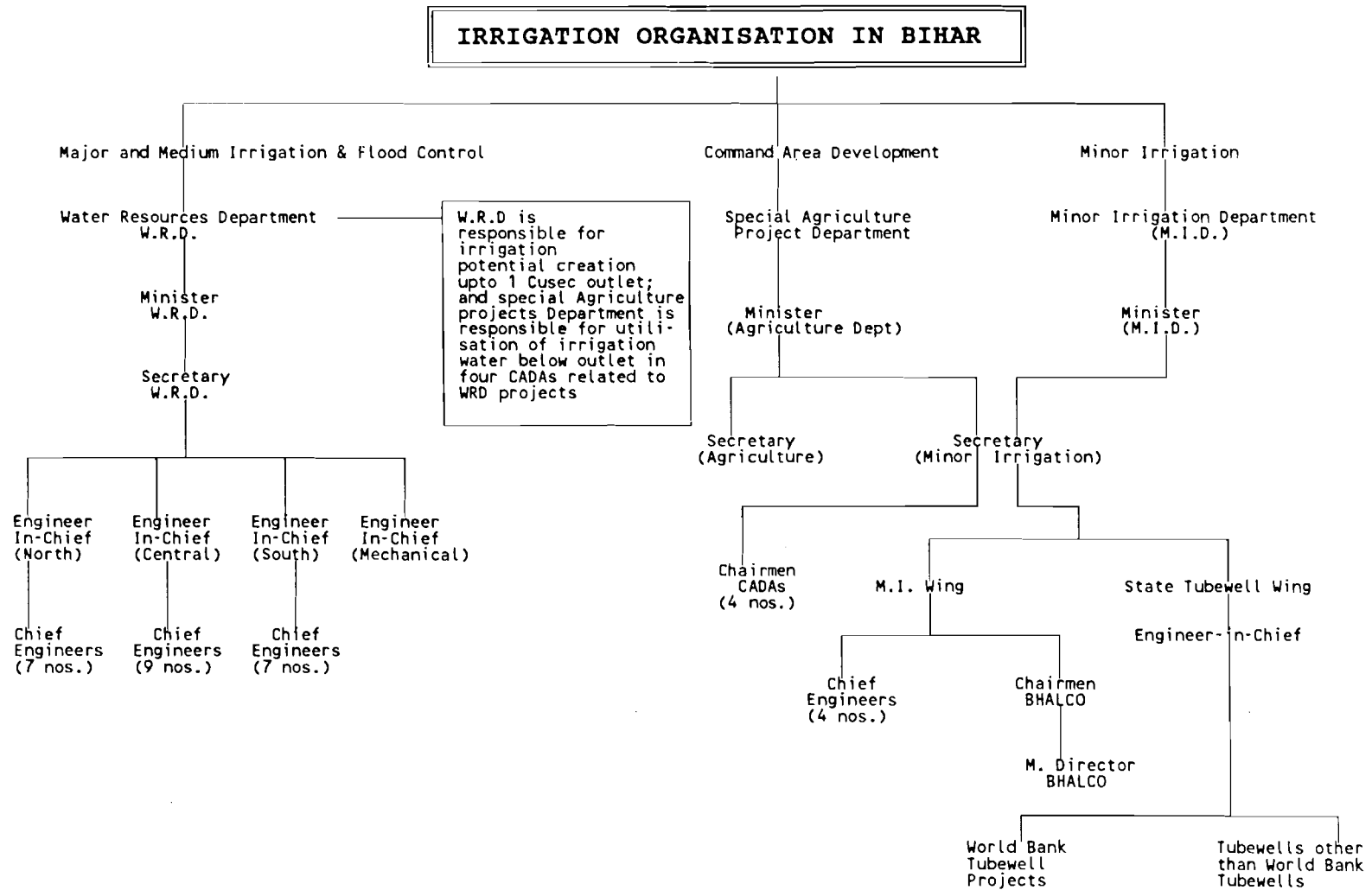
It is necessary, however, to underline the limitations of the information available. Bihar has been divided into five agroclimatic sub-zones. Three of these sub-zones are out of the study area. The primary experiences recorded and evaluated are further confined to large flow irrigation systems. And yet this is the first assessment of this nature that tries to capture the state scenario in respect of farmers organisation in the state for water management in a composite manner.

Irrigation Administration

The administration of water development and management is being done in three departments of the state government (Figure 1):

- **The Water Resource Department (WRD)** handles resource assessment, flood protection and major and medium irrigation works. This department controls an integrated irrigation cadre and lends services of engineering personnel to other departments dealing with irrigation. The department is headed by a secretary with three engineers-in-chief at the state headquarters. Field administration is basin wise but large basins have more than one chief engineer with technical coordination provided by the engineer-in-chief at the state headquarters.

Figure 1



- The **Special Projects Department** deals exclusively with the four CADAs in the state. The Minister of Agriculture looks after this department. The secretary holds joint charge of this department as well as the Minor Irrigation (MI) Department. He has a small secretariat with staff from Agriculture as well as the WRD. The work is done in autonomous CADAs.
- The **Minor Irrigation Department** looks after surface irrigation to command of 2000 hectares, surface lift irrigation, groundwater exploration, development, and management. The department has a hill area lift irrigation corporation (BHALCO) to specifically look after public lift irrigation schemes. Recently, in pursuance of the World Bank supported Bihar Plateau Development Project, a separate Authority has also been created. There is a separate Minister. The secretary is also in charge of CADA as mentioned earlier. It is worth noting that all minor irrigation works are the responsibility of panchayati raj institutions (PRI) under the recently enacted constitutional amendment and state legislation in pursuance of the same.

At present, the Rural Development Department has a large corpus of funds under the Jawahar Rojgar Yojna for community as well as privately owned sources of irrigation. This fund can also be used for improving micro distribution system under all category of irrigation works. This is a supplementary source of money for improving irrigation water management. An organisational chart is given at the end of the chapter.

This division of water development and management responsibility has prevented an integrated view of irrigation to be implemented. The yield from investment is, therefore, below expectation. The policy on FO involvement in irrigation management is also variable depending on the decisions taken in each department.

Progress of Participatory Management

NGOs have been working in water development and management of small irrigation works for the last two and half decades. These are wells, tanks, and tubewell systems, several of them under joint ownership and management. The spurt in this activity followed the disastrous drought of 1966-67. Vaishali Area Small Farmers Association (VASFA) is an outstanding example of an FO sustaining such effort for two decades. It has promoted more than a dozen similar societies which are functioning. Even though these are not cases of management transfer, they indicate the potential of FOs to manage irrigation.

CADA was the first to undertake promotion of FOs in large public irrigation projects and their involvement in water management. A number of organisations appeared from the 1970s onwards. However, CADA have devoted attention to physical infrastructure provision at the micro-level. They have taken farmers as the unit and are not building FOs for sustainable management transfer.

In the minor irrigation sector, poor performance led the Government to a policy of management transfer in 1991. By a resolution of 27 May 1991 the decision to transfer lift irrigation projects to local village authorities was issued. The projects were to be transferred on "as is where is" basis, through an agreement on the nominal payment of one rupee per year to government for a period of five years. The panchayats were also allowed a one time grant of Rs. 2,500 for each LI scheme and services of a pump operator-cum-guard free of charge. The panchayats have so far taken over 248 such projects out of more than 2000.

Similar instructions in respect of large discharge state tubewells were issued on 18 March 1992, and 677 such tubewells out of more than 5000 have been so transferred. It has also been clarified by government that in the event of continuing unwillingness of panchayats, these projects should be transferred for management to users committees. The state government had delegated the authority to transfer these schemes to the district collectors and desired that the process be completed by the end of June 1994. The progress has remained very slow in relation to the targets.

Major and medium irrigation had a consultative process for irrigators involvement which went into disuse with the passage of time. Irrigation bureaucracy in this segment had offered the strongest resistance to change. The four ARPs under progress have been the first to pursue FO involvement in a systematic and sustained manner. The result so far has been rewarding. However, legislative framework and administrative measures for the ID to pioneer a drastic change in the present attitude of functionaries and level of efforts amongst the irrigators is sorely felt.

Legal Position

Bihar irrigation, major and medium, is being administered under the Bengal Irrigation Act (1876). This act provides the basis for some joint action but not for work to be managed through organised FOs. The Bihar Private Irrigation Works Act (1922) provides for consultative committee of irrigators but not for management transfer to farmers organisations. It is also noteworthy that canal irrigation rules have not been promulgated for each of the projects nor changes made in the old rules for the Sone, Sakri, Triveni and Kamala Canal systems.

Therefore, the state government can proceed to work through executive instructions, till act and rules are brought in line with the National as well as the state water policy. This commitment has not so far been visible in operations.

CADA and minor irrigation works are governed by separate act and rules. However, the government order as noted earlier, for management transfers of LI and tubewell projects clearly support the case for similar action in respect of major and medium irrigation segment as also remaining minor irrigation systems. This is an important issue requiring close examination. The panchayati raj institutions have now been given ownership over minor irrigation, water management and watershed development. The full implications of this devolution for water user associations and their relations with PRIs are yet to become clear.

Too many laws to deal with water for irrigation has only created confusion. It is necessary that legislative consolidation and rationalisation taking note of emerging priorities receives attention in the state. For the present, a change in rules and promulgation of rules for each of the irrigation projects enabling FO involvement will accelerate needed intervention. Changes to remove anomalies between Bengal Irrigation Act and as indicated by the AFC evaluation may also be worthwhile. While long-term legislative measures are under examination, short-term action that provides for an FO role needs to be expedited. This will remove a negative perception among PRI and FOs that government seeks involvement to tide over immediate difficulty only. A more enlightened perspective remains to be conveyed.

Dimensions and Scope

The utilisation of the potential in Bihar is highly variable. An accurate picture in respect of surface minor irrigation is not available. In years of water scarcity several of these schemes fail to deliver results. The performance of private tubewells which are increasing at a phenomenal rate is not being monitored. The state tubewells with a potential of 0.63 million hectares are performing very poorly. The government resolution of March 1992 indicates that out of more than 5000 tubewells, some irrigation is available from about 2000 tubewells only.

The area actually irrigated from major and medium irrigation projects has been under controversy. This is due to difference in figures of actual irrigation between irrigation engineers and revenue assessment and collection staff, undependability of majority of projects being diversion schemes lack of diversification to high value cash crops and rice cultivation dominating with more than 51 percent share of which only one third is under HYV crops; and deterioration in physical systems raising doubts about the capacity to irrigate

areas as reported. A stage has been reached when government is not able to dispel these doubts on the basis of bureaucratic reporting.

The prospects for irrigation development in the state are indicated in the table given below:

Table 1
Irrigation Potential

Unit: Million Ha

| Source | Irrigation Development | | Balance |
|------------------------------------|------------------------|-------------------|---------|
| | Ultimate Potential | Potential Created | |
| Major & Medium | 6.5 | 2.75 | 3.75 |
| Minor (Surface) | 1.9 | 0.24 | 1.66 |
| a. Ground Water(Total) | 5.5 | 3.16 | 2.35 |
| b. Ground Water (Public sector) | - | 0.63 | - |

Source: Annual Plan 1994-95, GOB.

The environment for management transfer to FOs is being created by these negative perceptions about ID management. But experience about user management efficiency is very limited. Compared to the overall area to be covered, it is not yet adequate to provide guidelines for the variety of projects under five different agroclimatic sub-zones that comprise the state. There are, however, positive features of the private tubewells and NGO-managed group irrigation system. The three of the four ARPs in the major systems have also indicated encouraging outcome in terms of area coverage, water distribution equity and productivity. In spite of higher costs involved in such management, the farmers have responded positively and are prepared to takeover systems on 'as is where is' basis. The trials would need to be expanded as a step towards operationalising the commitment of the national water policy to FOs. This is a real challenge.

Returns from Irrigation

The declining financial resources for investment in developing the balance of water for irrigation has serious consequences for state's agricultural development. What is worse, the provision of funds for maintenance is becoming increasingly inadequate. Therefore, even the completed systems are deteriorating and benefits are getting reduced. Except for minor irrigation and

tiny sector under Rural Development, the state's capacity to increase present irrigation availability as also to maintain satisfactorily the already available services is under severe strain.

The state has irrigation water rate structure that is administered by WRD. state tubewells and LI schemes are administered separately. The basic formula for rate fixation does take into account O&M costs as well as capital investment. The realisation used to be adequate to run the system in an earlier era. Gradually, however, major and medium irrigation segment took up wider commitment to extend the system to water courses at public cost and to maintain this infrastructure. Simultaneously, there has been reluctance politically to increase the water charges regularly. The last revision was in 1983. A recommendation to revise the charges every alternate year was also made then. That has remained unimplemented. Therefore, the water charges are completely out of tune with the requirements of the system. The continuance of the heavy rate of prevailing subsidy is proving to be beyond the financial capacity of the state.

The implementation deficiency of the present arrangement makes the task even more complex. The assessment is usually delayed, the demand, when wrongly raised, cannot be verified satisfactorily since it is delivered late, land ownership records are not maintained correctly, and therefore, lots of discrepancies appear in the demand. As a result, bulk of the demand becomes arrears. ID records indicate that the maximum area covered by assessment in a year is in the range of 1.3 million hectares against the potential of 2.7 million hectares.

It has also been the experience that small holders of land tend to clear their dues while comparatively larger tenants fail to do so. Raising of water charges will not change this habit and may only penalise those who habitually make their payments. Apart from divorce between system requirement of funds and the return from the services rendered, these implementation lapses make the solution more problematic. A viable alternative is possible only through a more responsible and representative local system of management.

The question of capacity of irrigated land to pay for itself has also to be examined closely. The capacity is limited by return on food crops. Diversification of cropping has hardly taken place in the state. state's irrigated agriculture has to develop a cropping mix of food crops and commercial crops, with agroprocessing, that raises returns for higher payment. Bihar can, therefore, raise water charges only moderately for the present.

The farmers in the ARP areas have shown awareness about this dilemma. They have indicated two ways of resolving it. Firstly, they are prepared to operate and manage the system in more economical ways. They have expressed themselves in favour of reducing staff which eats up almost 90 percent of the O&M allocations. There has been local mobilisation of labour as well as resources in cash and kind to undertake repairs, with indicated will to contribute

more. Secondly, the farm leaders have indicated their willingness and capacity to assess and collect water charges in a manner that solves the presently experienced handicaps. They would expect, however, that past arrears are not their responsibility and bulk of it is retained by FOs for maintenance. The state government has indicated that FOs may be permitted approximately 70 percent of the water rate demand. So far, government agencies have been able to realise around 30 percent of the demand in most years and costs of assessment and collection is heavy.

A net 30 percent receipt to government will be of advantage. The financial aspects, thus, provide equal incentives to FOs and the government. Since the farmers would not be expecting government to undertake normal O & M, they would take steps to guard, safeguard and prevent the damage to the system. These assumptions emerge from the working of the FOs so far and the intensive interaction among the ID, FO, and WALMI. It is possible to test them after a formal management transfer has taken place.

Table 2
Bihar Irrigation Revenues

Lakh (L) = 0.10 million

| Years | Areas Assessed in L.ha. | Revenue Arrear L.Rs. | Assessed Current L.Rs. | Actual Total L.Rs. | Revenue Arrear L.Rs. | Collected Current L.Rs. | Total L.Rs. | Expen- diture on Assessment & collection L.Rs. |
|---------|-------------------------------|----------------------------|------------------------------|--------------------------|----------------------------|-------------------------------|----------------|--|
| 1987-88 | 11.16 | 3247.10 | 1019.81 | 4266.91 | 418.47 | 197.60 | 616.07 | 1075.28 |
| 1988-89 | 10.90 | 3414.08 | 749.49 | 4163.57 | 403.77 | 186.26 | 590.03 | 1072.09 |
| 1989-90 | 14.40 | 3485.37 | 471.25 | 3956.62 | 112.74 | 104.67 | 217.41 | 1417.98 |
| 1990-91 | 11.37 | 3890.51 | 1818.30 | 5708.81 | 223.83 | 116.15 | 339.98 | 1213.40 |
| 1991-92 | 11.45 | 5089.29 | 1392.45 | 6481.74 | 470.91 | 226.96 | 697.87 | 1184.00 |
| 1992-93 | 12.06 | 5634.87 | 1169.98 | 6804.85 | 458.50 | 377.15 | 835.65 | 1466.57 |
| 1993-94 | 13.18 | 5009.42 | 1657.42 | 6666.84 | 543.12 | 274.73 | 817.85 | 1444.88 |
| Total | 84.52 | 29770.64 | 8278.70 | 38049.34 | 2631.34 | 1483.52 | 4114.86 | 8874.20 |
| Average | 12.07 | 4252.95 | 1182.67 | 5435.62 | 375.91 | 211.93 | 587.84 | 1267.74 |

The Outlook

The chapters that follow have taken note of these limitations and potentials. Since full turnover is yet to be realised the live experience and lessons therefrom have received the major attention. Recommendation on such a narrow base is hazardous but have been structured to assist in detailing operational policy and strategy and formalising an action plan for expanding the experiment to more projects.

The task of expediting the process of clarifying policy and formalising FOs was greatly facilitated by the formation of a state level task force with the engineer-in-chief as chairman. This committee had representation from

concerned departmental wings like irrigation revenue and law. This will indicate the need for a state level committee supported by a unit for facilitating the implementation of the national water policy in respect of FOs. There are a number of other related issues of OPC and FO promotion which have been prioritised and discussed in the chapters that follow. Some of the more important questions include:

- Are formal FOs beneficial to the irrigation system? What are the benefits they bring to irrigators and the government?
- What is an appropriate process for organising farmers to manage irrigation? What should be the functions of irrigation FOs and how should they be evolved?
- What are the emerging conditions seen as facilitating replicability and sustainability of irrigation FOs ?
- Can FOs in irrigation management be financially viable? What are measures being undertaken to improve their resource mobilisation?
- What should be the jurisdictions of an FO and its structure? Why is a macro to micro level approach considered appropriate for large irrigation systems?
- Is the present policy and legal framework adequate to proceed with FO participation in management? What are the potentials and limitations of executive orders expanding the area and scope of FOs?
- Is there a perception of changing role of ID? What is the response of ID functionaries to the proposed changes?
- Is the present implementation infrastructure for the new directions of policy and administration adequate? What more is required?

There are not many choices left for improving efficiency and productivity of irrigation water in the state. The staggering demographic reality and uneconomic per capita holding requires irrigation to do better. Some statistics is provided in the annexure. The direct democracy of irrigators in the minor distribution system and at micro levels holds out promise. The approach follows directly from the objectives of the national water policy for participatory irrigation management. It will also support the new thrust to decentralising minor irrigation, water management and water shed management to local authorities in line with the amended constitutional mandate.

The mere transfer of assets and worries of irrigation management to lower levels of democratic government may, however, prove inadequate. Real democratic functioning will emerge from the greater participatory content in the management of economic enterprises such as irrigation. The analysis, conclusions and recommendation that follow are addressed to that task. They take note of the positive thrust of experience in this regard.

Government Participation

WALMI, Patna has implemented the ARPs and generated the experiences that provides the basic material for this report. In spite of various constraints the ID provided the support and encouragement for this work.

Once the progress made required greater interaction with government, a coordination committee with the secretary of the Department of Water Resources was organised. It set up a task force consisting of the engineers-in-chief and others to examine and process the draft MOA and MOU expeditiously. The project's task was greatly facilitated and the process of management transfer is being pushed ahead.

The present report was also discussed in the task force. A policy level discussion on the major findings and recommendations was also organised in the state. The proceedings are enclosed in Annex I.

The WALMI organised two one-day workshops on FOs and OPC on 18-19 June 1994. The discussions helped to finalise the report. Their recommendations are in Annex J.

Chapter 2

EXPERIENCES

Introduction

Bihar's experience with farmer involvement in water management in public irrigation systems spans minor irrigation, tubewells, CADA and the ARP in major irrigation projects. The experience in four ARPs of Paliganj, Garachoubey, Jamunia and Asarganj Distributaries forms the primary source of material for what follows. The fragmentary information available in respect of FO in CADA, and decision of the State Minor Irrigation Department to transfer management of state tubewells and lift irrigation schemes to village panchayats and/or farmer organisations provided the secondary source. An attempt has also been made to assess NGOs work in water development and management that has a bearing on the aspects of this report. All these experiences span almost two decades.

The longest direct experience on a major flow irrigation system is in respect of Paliganj Distributary of the Eastern Sone Canal System. The Sone system is a diversion scheme with a major barrage on an inter state river. The commanded area of the Sone system has expanded considerably surpassing the designed levels. An ambitious modernisation project has been prepared and is pending implementation due to unavailability of resources. The work on the Paliganj Distributary falls in this system and was started without any financial support for updating the system or even undertaking essential repairs. It is the farmers persistence that has kept the work going.

The second project in the Garachoubey Branch Canal is also a part of the Sone system but in the main Western canal. This is at the tail-end and in an area of rainfall deficiency. This ARP is just about two years old, with episodes of discontinuity. Third ARP is in Jamunia sub-branch canal of the Gandak project a post-independence major system but also a diversion scheme. This is on an international river with water sharing arrangement with Nepal. The last ARP in Asarganj Distributary is part of the Badua major irrigation system supported by a reservoir. The supply in this system is more stable and yet the farmers have shown encouraging response to organisation for better management. The Paliganj provided the experience in initiating participatory management towards eventual management transfer. The other three projects have contributed to some understanding regarding replicability. A summary profile of ARPs is provided in Annex F.

CADAs are mandated to function with farmers participation. The formation of formal FOs appear to have been taken up only after the Central Ministry of

Water Resources sanctioned pilot projects along with a programme of financial assistance. The CADAs in Bihar have undertaken the work since 1984. A summary of findings and lessons specially undertaken in connection with this report is provided at Annex G.

The State Minor Irrigation Department looks after more than 5000 heavy duty state Tubewells as well as 2080 lift irrigation schemes. They have been faced with poor maintenance, poor returns and large scale closures. As indicated earlier the response of PRIs to management takeover of these schemes has been disappointing. As a result, it has been clarified that management transfer could also be made to users' associations as inherent in these orders. The outcome is not known. However, the emerging clarity in government policy of turnover is noteworthy.

A large number of NGOs undertook irrigation development in Bihar as a follow up to activities during 1966-68 drought. Most of the work was confined to constructing wells or repairing and constructing tanks. However, quite a few schemes were taken up for sinking tubewells and managing them as joint enterprise. One such venture was taken up in Vaishali in the Gandak command which is sustaining now for more than two decades. A brief case study of this project is available in the Annex H. In fact Vaishali system has been replicated in contiguous areas of North Bihar and there are about 15 such functioning societies. All told more than 300 group tubewells are being managed by them. This experience will be relevant to the question of sustainability of farmers organisation for irrigation in the conditions prevailing in Bihar.

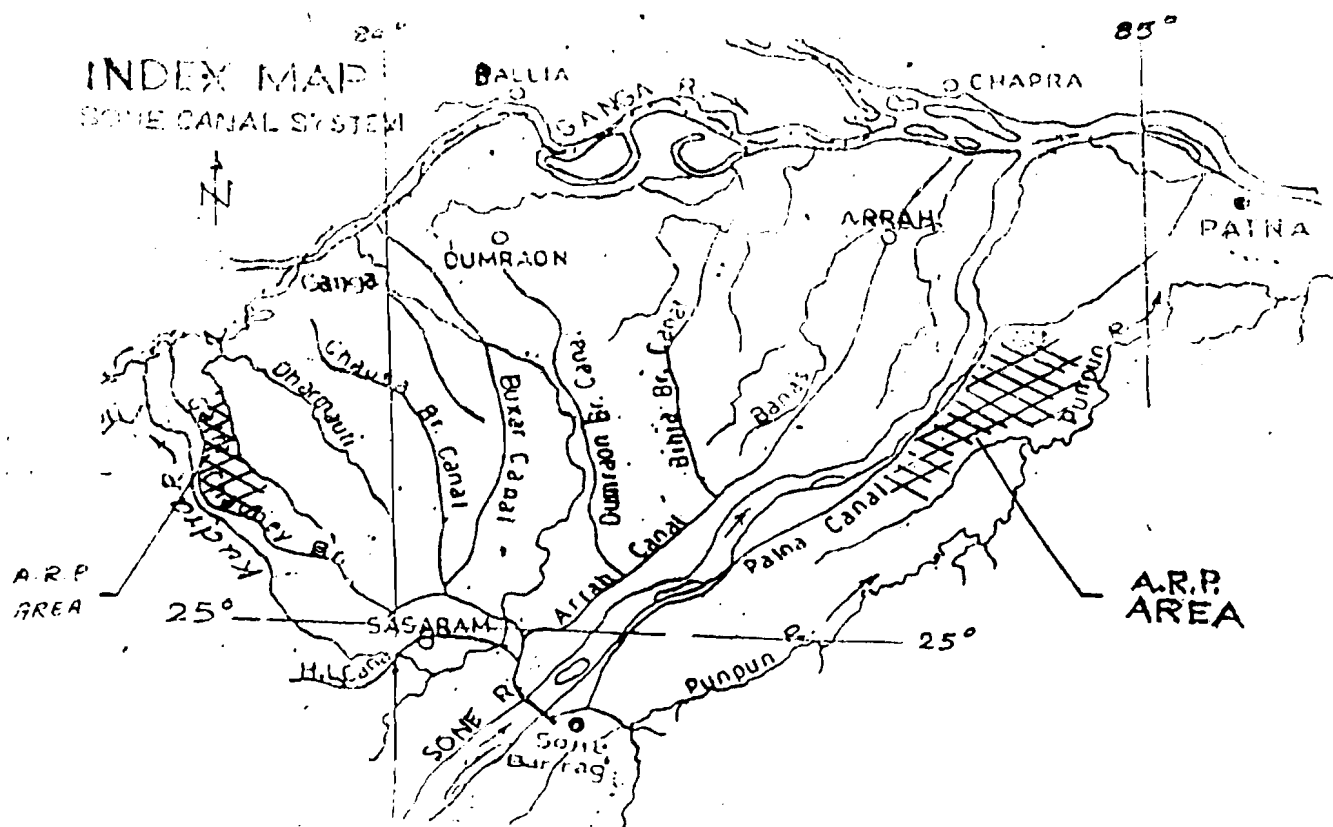
The state has a history of peoples participation in community irrigation schemes, which are century's old. However, with the availability of state funding of such schemes, community participation has declined. The paucity of state funding has resulted in reduction of irrigation from such sources. The same experience is being repeated in community flow irrigation schemes under programmes of rural development. A general approach and modalities of FO management will be relevant if these investments are to yield potential benefits.

Paliganj Distributary

Sone irrigation system was completed in 1874. It was partially modernised during 1960 with a barrage replacing the old Anicut. Besides two high level canals, one each on the East and West, were added to cover larger areas. These series of canals and tertiaries are expected to cover a designed command of over 700,000 ha, spread over three cropping seasons. Two ARPs have been organised in this system. Paliganj Distributary is on the eastern side, a part of the Patna main canal. Another ARP was taken up in two distributaries of

Garachoubey Branch Canal. This Branch Canal is at the end of the Western Sone Main Canal, receiving water after the other two larger canals have been fed.

Figure 2
Sone Canal System



Paliganj Distributary takes off at 74.4 km. from the headworks of Patna canal. It has a 40 km. long network. The cultivable command area is 12,197 hectares spread in 76 villages. However, it transpires from the records that only 58 villages within the hydraulic boundary have received irrigation from this distributary. The maximum recorded irrigation during the main kharif

(monsoon) season has been 4,660 ha. The identified problems which led to the ARP in 1988 under the WRM&T Project were mainly the following:

- inadequate canal capacity due to increased demand on the system relative to the previously commanded area
- poor maintenance due to inadequate allocation of resources by government for O&M and other constraints in execution of maintenance works
- unattended monitoring of operation in absence of a scientific operational plan for water distribution within the distributary
- lack of communication between the field functionaries of the irrigation department and the farmers especially the farm leaders who could influence the conduct and performance of farmers within the distributary

Identifying Leadership

The trial with FO intervention for improved systems management followed a change in the ARP objectives responding in the process to irrigators views of system maladies. The farmers were already in effective command of water distribution and system damages. ID functionaries were helpless. The WALMI team undertook the pioneering work of preparing the meeting ground between system managers and system users. Village level meetings and an open-ended collaboration in water delivery and distribution generated goodwill and understanding. Transparency found both partners to have neglected their obligations. A review indicated 20 critical villages that were key to improving performance. The efforts to mobilise farmers started with these twenty difficult villages with WALMI team remaining the persisting facilitator.

Farmer organisation work was found to be dependent on choice of the right leaders. In the first place those displaying interest in the technical study acted as key persons to identify influential opinion leaders amongst the farmers. Subsequent meetings at the lower and middle reaches offered opportunity to involve some more farmers. All such persons promising leadership at one point or the other worked informally and involved themselves in activating different villages. The informal arrangement continued for 15 months during which several meetings took place and visits to outside state projects were organised. The leaders had entered on the venture reluctantly. Their interests and orientation was rooted in considering the village as their last frontier. In the process inter-village problems of water conveyance had been progressively accentuated. Their coming together was a turning point. They were able to

explore commonality. As they proceeded with their interaction they were able to see the real call of leadership. That was in unity to improve the system's performance. The basis for a constructive dialogue with ID functionaries and joint efforts to bring irrigators to the same view had been created. However, the task was found to be exacting and different from merely acting at the behest of government functionaries and carrying out their orders.

Organisational Process: The Macro-to-Micro Approach

The choice of the jurisdictions of the FO and the course that organisation formation will take was determined by the farm leaders in the command. They saw two sets of inter-related problems. Firstly, the problem started with the faulty operations of the head regulator of the distributary and inequitable distribution was traced directly to the decisions regarding availability and timing of release of water at the head regulator. The farmers were prepared to live with less water and work with mutual accommodation to share scarcity to the extent possible. That was possible only if they could control the regulator and had advance information from the ID functionaries regarding quantum, the time and the period for which water was available. The hydraulic boundary of the distributary was the natural choice for jurisdictions of FO.

The second level of problem arose from intervillage rivalry generated by the prevailing regulations at the head regulator. There was a scramble for water among the villages to the extent of resulting in wastage at the head reaches while the tail-end farmers did not get a share for years together. The root of the intervillage rivalry could be tackled, so reasoned the farmers, if they had the opportunity of controlling the head regulator and proceeding to sharing of water between the villages. The intervillage problem was not possible to solve by controlling lower level structures. The villages were subject to social pressure and this could be exercised if a distributary level organisation appeared first. The initiating point of the entire organisation process was the control of the distributary head regulator and finalisation of operations plan.

The WALMI team started their work by learning to understand this interface between the hydraulic and village jurisdiction. They found it necessary to bring together all persons who could influence canal operations. Accordingly on ninth June, 1989 a meeting of 75 leading farmers along with local functionaries of the Water Resource Dept. and the WALMI team was convened. This meeting considered canal operation to be the most challenging problem and discussed the proposal for having an intervillage "farmers ad hoc canal operation committee" of 10-12 persons. The meeting, however, went for a somewhat different approach. It identified a total of 20 critical villages within the distributary command which could help or hinder the process of collaboration.

They also wanted to discuss this matter within their village which alone could send a representative to the proposed ad hoc committee.

These leaders, thereafter, went about organizing village level meetings in these 20 villages and the first meeting of the ad hoc committee could be convened only on 5.9.89. This committee received the needed sympathetic support from Irrigation Department when the engineer-in-chief issued a formal order for collaboration with the ad hoc committee in the operation of the system. Initially the meeting of the committee were promoted by WALMI. However, by the end of September 1989, the first meeting without initiative of WALMI was held and the process continued thereafter.

The consolidation of the ad hoc canal operations committee continued till it converted itself on 25.5.91 into Paliganj Distributary Farmers Committee and adopted its bye-laws. There were two significant developments. Firstly, as a regular committee, the FO saw its work more than merely operations of the canal. The operation was the means for consolidating its work. Secondly, the 20 critical villages who had joined together reluctantly had found that cooperation was advantageous and working. They were prepared to expand the organisation to cover all villages. Since expansion was their decision, they took on the further responsibility themselves of persuading remaining villages to organise and become part of the operations structure of the Paliganj Distributary Farmers Committee.

The committee organised a meeting of VLC/DLC members on 27-28 April 1991 in which more than 200 members participated. It came to the conclusion that results flowing from participation in the operations of the distributary indicated improvements in the relations between the irrigators and ID functionaries, unity and understanding amongst farmers of different villages and responsiveness of the upstream farmers to the problems of tail-end farmers. They also expressed self-confidence based on the experience so far that the DLC was in a position to undertake works related to the whole range of water management activity within the distributary. As a result of efforts of members of the DLC, 32 more VLCs were organised by July 1993 and all of them joined the DLC. It was a unique experience in which 32 villages formed their committee in this manner.

The managerial input put in by the DLC members was the deciding factor in this expansion so that the committee of 20 now became a DLC representing 52 villages within the distributary. The strengthened DLC held farmers camp on 22-23 September, 1993 and more than 500 members participated. This camp went a step further and authorised the DLC to formulate MOA and MOU in consultation with WRD for eventual management transfer of the distributary to the Paliganj Distributary Farmers Committee. The process of the farmers

themselves organising farmers was facilitated by the outcome of the canal operations which had taken the committee to undertake essential repairs, resolution of conflicts and extension of irrigation to villages who were deprived of water for a number of years. The confidence of farmers in organising VLCs proceeded from the success they had achieved and the conviction they could instill in the new villages that came into its hold through this organisation process.

Apart from promoting the organisation process, WALMI had also undertaken the training and learning process. It regularly distributed technical literature on irrigated agriculture and organisation building in all the meetings. WALMI also had several 2 days training sessions for VLC members on irrigated agriculture. A few demonstration on improved agriculture were also organised. In fact, the farmers camp in April 1991 discussed issues related to improving agriculture so that their management operations yielded larger benefits. Thus while water availability and distribution was given the higher priority, it was understood that irrigated agriculture was the ultimate objective.

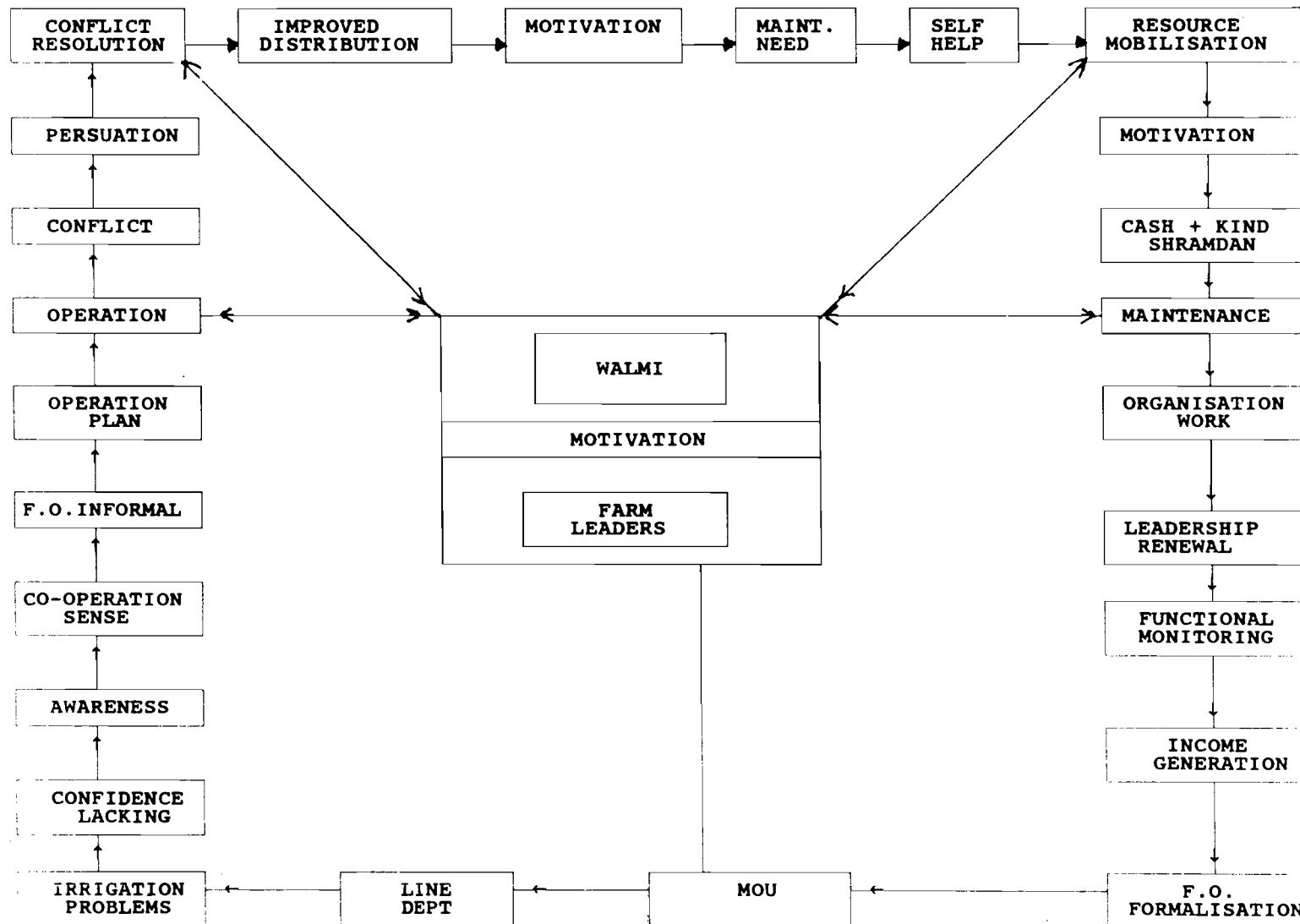
The process of actual organisation followed a course in which a general assembly selected 20 critical villages. Members in the assembly, thereafter, organised village irrigation committees in these 20 critical villages with the support of WALMI. All the chairmen of the village irrigation committees (VLC) automatically became members of the committee. After regular elections of VLC chairmen, this committee was converted into regular committee. The committee was expanded by additional villages forming committee of their own in which members of the DLC participated. The DLC formed an executive committee.

By and large, the elections to the VLC is by consensus rather than elections. The DLC has been undertaking the task of monitoring the activities of the VLC and the vice-versa. It has been found that the activities of the DLC and results flowing from the same is a major item of discussion in the VLC meetings. This process of two-way communication in which line department and the WALMI team have functioned as observers is contributing to improved functioning of the whole arrangement.

The process of organisation-building suggests the following conclusions (Figure 3):

- A two-tier system, one at the distributary and the other at village level will be appropriate to manage water problems within the distributary.

Figure 3
ORGANSATIONAL FLOW CHART FOR FO



- The organisation process has to seek support for problem solving and has to start from difficult villages. Once these villages started cooperating, the rest had greater incentive to join.
- Some lead time is required for the organisation to become universal. Farmers want to see actual benefits and results are more convincing than any promise of inherent potentials.
- Water equity has to be at the top of the agenda. The tail-end farmers have tended to be the engine of consolidating the organisation and a pressure within the organisation for water equity enhances chances of success.
- WALMI input was critical. Considering the problems it was less than adequate. As organisation started working WALMI tended to reduce the level of its participation. Greater dependence on the internal strength of the organisation has helped universalisation.
- The process may seem slow. However, considering that 52 villages organised to be part of the distributary level organisation it has to be contrasted with the time that can be taken in forming and federating 52 autonomous farmers organisation. So far, many lower level committees have come up in CADA, but no federation is in sight.

It may be appropriate also to list some of the positive factors and advantages of the approach. The organisation proceeds from identification of a problem and pursues the same at the distributary turn-out point and the village. A somewhat large organisation was a recognizable entity and was in a better bargaining position with ID than a small organisation. It proved to be a strong forum for persuasion and social pressure to resolve conflicts at the village level. It generated internal and external environment that allowed early results in terms of better water distribution. The only promise held out was of a guarantee of water supply at the distributary head regulator. No promises were made for updating the system or taking up physical repairs. This was beneficial for the credibility of the government.

As a result, transparency of the main actors was achieved. A general attitude of blaming one another was gradually replaced by a sense of sharing in day to-day problems. Finally, the outside managerial input requirement was limited. It has proved to be a cost as well as time effective way of organizing water distribution within the system where control of a single point is taken over by the farmers organisation. The economy of scale has worked towards organisational viability and greater sense of reliance on internal capability building.

The process of the formalisation of FO in Paliganj followed an interesting course. The first task was to work out a MOA. The farmers were provided with seven different models of the memorandum of association for FOs from different parts of India. After discussion, they rejected each one of them. Thereafter, there was continuous interaction between the WALMI project team and the farmers for a period of about three months. As a result the framework for their memorandum of association emerged. In course of the discussions the farmers disclosed their own minds and were assertive in providing for adequate autonomy in their working. They did not provide for representation of ID in their executive committees. Another interesting feature was the farmers' keen desire to provide for flexibility in their operation, so that at any point of time they could enlarge their activities beyond the field of irrigation. The preference was for identifying the benefit of water for organisation to secure maximum acceptability. Every other activity would follow.

Process of Formalisation: Memorandum of Understanding

After formation of the FO and adoption of the MOA, the DLC was anxious to initiate activities for access in the canal system to the lower reaches denied this benefit for the last ten years or so. The problems were discussed in meetings of the VLC and the main reasons were found included:

- the undependable and erratic supply of water at the head of the distributary
- over outletting due to vested interest of the farmers
- unauthorised interference with conveyance of water and poor regulation
- overuse of water in the upper reaches due to lack of knowledge about the water-crop relationship

It was considered that if an assurance was available that supply would be regular, the illegal obstructions in the canal would be removed. On such assurance backed by DLC, the farmers willingly removed the cross bunds. The consequence of this action and resulting water access was very much appreciated and the confidence of the people of the lower reach started being restored. Their interest in the FO increased proportionately. This was during the kharif season of 1989-90. To build up further confidence, participatory management of the distributary was started in kharif of 1990-91. The system provided for water supply for 10 days and closure for five days as notified by the government. The FO prepared an informal operation plan by which it was decided that out of ten days water will be supplied in turn for the required

number of days to the five reaches using the method of rush irrigation when appropriate. This has yielded some beneficial results as seen in Table 3.

Table 3
Kharif Water Distribution in Paliganj Distributary (1988-1993)

| Part of Command | % Kharif Area under the Reach | Percentage Actual Kharif Delivery | | | | | |
|----------------------|-------------------------------|-----------------------------------|------|------|------|------|------|
| | | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
| Paliganj Reach I | 19.0 | 43.9 | 42.6 | 46.0 | 45.7 | 39.5 | 30.1 |
| Chandos Sub-Disty. | 19.9 | 14.3 | 11.9 | 10.9 | 10.2 | 13.4 | 13.4 |
| Paliganj Reach II | 16.1 | 24.7 | 30.9 | 21.0 | 13.8 | 16.2 | 17.4 |
| Bharatpura Sub-Disty | 14.3 | 04.4 | 03.8 | 04.1 | 12.0 | 12.8 | 16.9 |
| Paliganj Reach III | 30.7 | 12.7 | 10.8 | 18.0 | 18.3 | 18.1 | 18.2 |

However, the operation plan is still part of a learning process and will take time to be fully operational and to be satisfactory for all entitled to irrigation. In the meantime, this more equitable accrual of benefit has established the credibility of the enterprise and secured improved support from farmers and ID functionaries.

The operation plan prepared and implemented by the FO in its informal phase led to confidence that FO could manage water distribution and progressively improve performance. This was the objection of taking water from the government at the head regulator and distributing it by the FO to the farmers according to their needs so as to improve distribution in the entire command area.

The farmers realised that a more formal relation would provide impetus for better management under a memorandum of understanding executed between the FO and the government. Accordingly, an MOU was drafted and circulated to the different villages under the DLC, and meetings were held in the 20 critical villages in which every item was discussed threadbare with the VLC members and the farmers. The villagers suggested modifications in the draft which were incorporated in the MOU (Annex E).

In order to make this MOU effective, the provisions of the Bengal Irrigation Act (1876) and Sone Canal Operation Rules were used. It was found that although the issue of permit for long lease to a group of persons as also authorisation by the Divisional Canal Officers for collecting water rates for such supply was provided in the Act, there was no provision for issuing permit and executing

Satta agreement with a registered FO. It was essential to promulgate separate rules for the purpose. Accordingly, three drafts in respect of water permit, agreement to supply water and MOU were submitted to the Irrigation Department for their concurrence. The Irrigation Department's task force headed by the engineer-in-chief finalised recommendations with certain modifications which have been approved by government and accepted by the FO.

Functions of FOs: A Self-Evolving Process

The FO registered under the Societies Registration Act (1860) is named Paliganj Distributary Farmers Committee. The MOA defines the objectives in broad terms that has two principal parts: the task of canal water procurement, distribution, O&M in connection therewith and water rate assessment and collection and action in connection with raising agricultural productivity and services in pre and post production period to that end. The committee has further undertaken in the MOU to pursue the objective of securing for its members the technology of cost-effective ways of increasing their income so that agriculture could become a more remunerative business.

Improved irrigation management is the means to achieve this objective, and it has received higher priority in the initial phase. However, as seen in the process of organisation, simultaneous steps have been taken to raising the awareness level about higher productivity technology, including better understanding of water-crop relations and judicious application of water. The committee, though, has confined itself to former activities only at present.

The initial functions performed so far were operation, repair and maintenance, resource mobilisation, and conflict resolution in connection with the supply and distribution of water. When the farmers started their collaboration with ID in operations they identified vulnerable sections in the canal system and this led them to think about repair and maintenance. The costs involved and difficulties in getting government funds led directly to question of raising local resources. During the actual operation, specially when there was scarcity of water, conflict among various sections of the farmers as well as different villages appeared and necessitated conflict resolution. The following three functions are need-based, capability-oriented and self-evolving (Figure 4).

Operation. The operation plan in Paliganj Distributary was evolved jointly by WALMI team, Line Agency and the farmers in 1990-91. The operation plan evolved suggested rotation between five sectors of the system and start of irrigation from the tail end, but the farmers disagreed. They openly stated that this objective was unachievable as the upper reach farmers would never allow water to the tail end without irrigating their fields first. The farmers' view prevailed and first trials started from head reach. With experience, the farmers

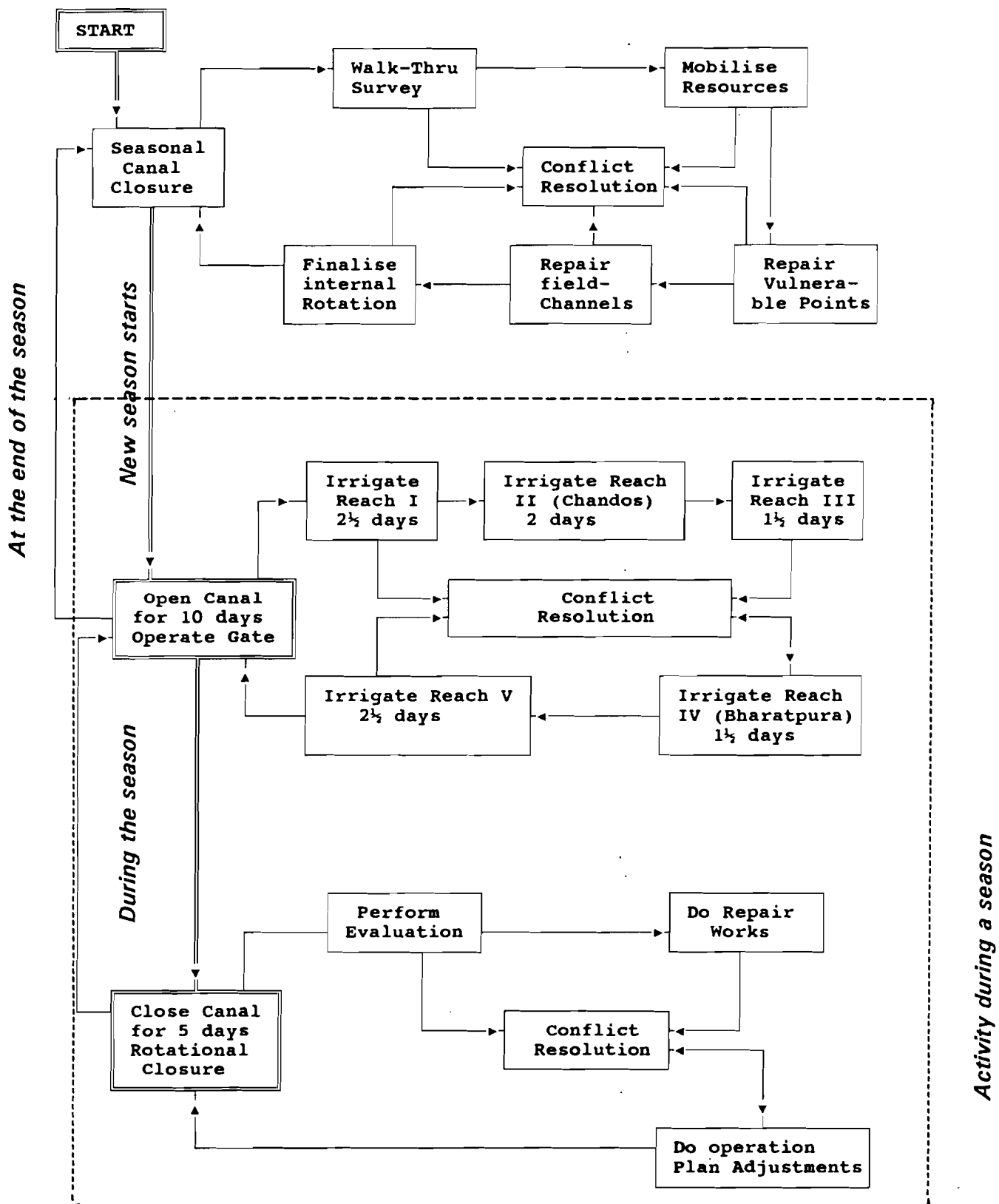
themselves came to the view that in this plan the tail end would never get water. The alternative tried was that irrigation should start once from the head reach and once from the tail end and this alternating arrangement be repeated throughout the season. This was practised and area of coverage has increased from 1991 onwards.

The year 1990-91 was one of scarcity and crisis condition prevailed. The dispute between various sections of the farmers came to such an intensity that line agency decided to pull out. One group of farmers suggested to take police help but it did not work. Another group of farmers proceeded to resolve the problem through persuasion and social pressure. The first step was to force rush irrigation to lower reach villages by the efforts of DLC members. Then Bharatpura village which was obstructing flow of water downstream was made to agree to remove obstructions by having DLC meeting in that village itself instead of usual venue at Paliganj. These were encouraging developments which were to guide future efforts.

Maintenance and Repair. The farmers organisation first undertook in 1989-90 a walk through survey along with the line agency and WALMI officers to identify the deficiencies in the distribution network and estimated the cost of rectification to be roughly Rs. 7.0 million. Since so much money was not expected to be allotted by government it was decided to take up more important repairs and accordingly priorities were fixed. In 1990-91, the then engineer-in-chief had allotted Rs. 1.1 million for the repair of the priority works and the chief engineer, Aurangabad had taken action for its implementation. However, due to the opening of the canal in the first week of June, 1990, the work could not be done.

In 1990-91 and 1991-92, the Chief Engineer, Irrigation Department, Patna also allotted Rs. 0.2 million for the repair works but completing all the formalities took time and this year also the repair work could not be done. Likewise in 1992-93 the formalities could not be completed and the work could not be done. The failure due to certain procedural hurdles in ID repairing the canal led the farmers to resolve not to depend entirely on the government. They also felt that repair of the canal by the farmers organisation could be cheaper. Hence in February 1992, they decided to take up the repair work of the canal by organising voluntary labour. They also succeeded in creating an awareness in the village level committees and persuaded them to repair the canal in their own village portion.

After February 1992, different villages organised repair of the canal in their area on voluntary basis. The FO is by now confident that they would be able to do the repair either by voluntary work or by collecting subscription, in case



**Self-Evolving Cyclic Process Involving Operation,
Maintenance, Conflict Resolution and Resource Mobilisation
(PALIGANJ ARP)**

Figure 4

transfer of 70 percent of the water rate as proposed in the MOU, is not found to be sufficient. Table 4 indicates efforts made so far.

Table 4
FO Resource Mobilisation in Paliganj

| Nature | Amount | Participating Villages | Remarks |
|--------------------|-----------------------|------------------------|--|
| Voluntary Labour | I.R.48900 | 24 | Variable days in each village as per need. |
| Cash Contribution | I.R. 1207 | 16 | Amount with VLC in Bank account |
| Grain Contribution | (3125 kg. rice/paddy) | 24 | 4.5 kg/ha rate agreed for each farmer. Progress slow |

Conflict Resolution. In the Paliganj Action Research area, the conflicts between the farmers and the line agency have been reduced considerably because of transparency in operations, involvement of line agency in FO activity, removal of obstruction in the canal by the farmers themselves, self-operation of the canal by the farmers and supervisory role of the DLC/VLC in the maintenance work undertaken by the government. The conflicts between villages have been reduced through regular sharing and meeting and mutual appreciation of the constraints. Similarly, the conflict among the farmers within the same village has been reduced through persuasion and mutual discussion. So far there has been no occasion of a possible conflict between the VLC and DLC. The level of tension generated by canal waters in the area has been on the decline. The contribution of VLC and the DLC through frequent meetings and dialogues has been substantial. The ID has been a beneficiary too. Participatory process has shown the potentials of reduction in water-related social tension.

The FO has come to understand the exacting nature of their functions the hard way. They are adjusting their organisational responsibilities to meet the challenges. However, they are wary of adding too many functions too soon.

That explains why agriculture development including input supply and marketing has been given a muted attention so far. The FO is still at a stage where irrigation management tasks have not been mastered nor water distribution reached a level of satisfying all nor resource mobilisation effort has become a regular routine matter. Agriculture and even off-farm functions will emerge higher in priority in the same self-evolving process as elements of irrigation management has done. Irrigation is the foundation of irrigated agriculture and its stability will facilitate the task of building super-structure of modern agriculture, crop- diversification, processing, marketing and off farm employment for those not engaged full time in farming. There is a long way to go, and organisation is aware of it. That is the reason why it has been able to sustain itself for the last six years even during a break in the donor support for months during 1992-1993.

Garachoubey Branch Canal

The Dangri and Barhupur distributaries of the Garachoubey Branch Canal are a part of the Western Sone Canal system. Bahuara pump canal on the River Kudra supplements the available water between these two distributaries. Erratic power supply has, however, adversely affected even this augmentation. As it is the last canal to take off from the left main canal, it suffers from deficiency in supplies. Comparatively lower rainfall adds further to difficulties in meeting the full demand of the command.

With the introduction of HYV crops from early sixties in the wake of Intensive Agriculture District Program the need for better operations and O&M has been acutely felt. The farmers responded to the initiative taken by an NGO to organise for the solution of their irrigation problems. The farmers' meetings during 1993 were largely attended. The selection of Community Organiser from the farmers themselves, their intensive training in Patna, the socioeconomic survey of the villages prepared the background for the speed with which the idea of FO formation spread in the area. Although the NGO initiative fell through in a couple of month's time due to governments procedural problems, its impact was still there when the effort was renewed by WALMI through ISPAN support towards the end of 1993.

In Garachoubey Command two distributaries, Dangri and Barhupur, were taken up for the organisational work. Eagerness of the farmers decided the selection. The basic features of the two Distributaries are shown in Table 5.

The organisation process was initiated on the pattern of Paliganj with minimal deviation. To start with a general meeting of irrigators of the Branch Canal itself was held. The meeting identified key contact farmers for whom a three

day training programme was organised at WALMI, Patna. A Branch Canal level ad hoc Committee emerged during this training and this committee understood the further organisational responsibility. Thereafter, separate general assembly of irrigators and others were convened in the Distributary Commands. Ad hoc DLC were formed there. The members so selected were again exposed to motivational training in batches of 40 and charged with forming VLC. Once the VLCs were formed in all the villages, the further process of making them functional by performing tasks was started.

Table 5
Features of Garachaubey Project Area

(Hectares)

| Distributary | CCA | No. of Villages | Kharif Area Designed/Actual |
|--------------|-----------|-----------------|-----------------------------|
| Dangri | 1265.0 AC | 25 | 466/400(1993) |
| Barhupur | 753.5 AC | 15 | 12/190(1993) |

The organisation process was initiated on the pattern of Paliganj with minimal deviation. To start with a general meeting of irrigators of the Branch Canal itself was held. The meeting identified key contact farmers for whom a three day training programme was organised at WALMI, Patna. A Branch Canal level ad hoc Committee emerged during this training and this committee understood the further organisational responsibility. Thereafter, separate general assembly of irrigators and others were convened in the Distributary Commands. Ad hoc DLC were formed there. The members so selected were again exposed to motivational training in batches of 40 and charged with forming VLC. Once the VLCs were formed in all the villages, the further process of making them functional by performing tasks was started.

The organisational process had some set back in the middle. The NGO was too excited about the programme, took up enthusiastic measures and made high promises. Ultimately, the proposal fell through due to procedural difficulties. The NGO withdrew abruptly. The adverse impact of this development created a difficult environment when the work was again taken up by WALMI project team with ISPAN support. With patience and frank communication the hiatus was broken and farmers enthusiasm was restored.

The FOs in this project area identified maintenance as of highest priority. Both the distributaries were in poor shape. More than one third of the main channels

were almost extinct. A walkthrough survey was organised during December 1993. Representatives of the line agency, DLC, WALMI participated. This action resulted in identification of priority repairs and restoration work. The responsibility for repairs between the ID and FO was demarcated in the following manner:

| Irrigation Department | Farmer Organisation |
|---|---|
| 1. Installing gate in head regulator | 1. Desilting the canal from 0 to Mile 1 |
| 2. Syphon Construction near National Highway | 2. Reconstruction of weak canal bank from Abhiawar village to National Highway. |
| 3. Construction of escape channel from Bishnupur village up to the river. | 3. Construction of canal bank from National Highway to Bishnupur. |

In general, the FO has succeeded to undertaking part of its work in the current season. The Department has not done so except repair to the gates due to budgetary constraints and procedures. The FOs work, based on earthwork and simpler repairs can yield best results only when Line Dept. can undertake its part of the commitment. The FO, knowing the difficulties of government did not put any precondition of updating before offering to collaborate. In fact, some further resource mobilisation effort by VLCs is on and the amounts are being put in bank account.

Some discussions on operations have taken place between Line Agency and FO. The DLC/VLC have also undertaken discussion about operation plan below the distributary turnout. All this has not been converted in collaboration so far on the pattern of Paliganj. This is a clear indication that a very quick management transfer in an environment of bureaucratic lack of commitment cannot be expected. Two to three years lead time as in Paliganj may have to be accepted during the pilot phase. The question of water rate transfer or conflict resolution task has not arisen yet.

The Garachoubey experience provides some interesting elements to be taken note of in the organising process. The line agency functionaries have not kept their promises of participating in meetings organised with their consent. They have been less than enthusiastic about the trials. The need for special selection of lower functionaries during the formative period of organising has been repeatedly brought to the fore. The farmers are quick to respond to such

initiative. However, their level of interest can be sustained only by active involvement in specific functions. In its absence, the VLC/DLC tend to be dormant and need extra effort subsequently. The state government does not have any specific programme and uncertainty of donor support makes them withdraw. Programme once started has to be pursued till the objective of management transfer is realised. These efficiencies have to be taken serious note of in the context of state policy on FOs and its objective of management transfer.

Asarganj Distributary

The work in this system started in December 1991 by WALMI office under WRM&T. After close of USAID assistance, work remained suspended. It was restarted only in September 1993 with ISPAN support.

The distributary is at the tailend of Badua left branch canal. It has a GCA of 5000 ha spread in 32 villages. However, the distributary is not in a position to carry more than 70 percent of the designed discharge due to poor maintenance. The area is politically active and farmers are fighting court cases to safeguard their perceived interest in not paying water rate in the light of traditional right to water in the system.

The water supply in this part of the Badua Canal system is augmented through diversion of small local streams. The farmers themselves undertake this task, from before the construction of the canal system. The security of the new canal system and lack of organisation had reduced the emphasis on this work. This has been causing adverse impact on the overall distribution in all the reaches of the distributary. The first task that organised farmers have taken up was to restore the old practice of augmenting supplies in the canal system.

A weir on Taruni river had been augmenting water supply in Asarganj distributary. It had become defunct from disrepair and 30 cusec supply had been lost. The DLC of Asarganj organised voluntary labour camp of its members from 5 to 7 June 1994. 486 persons from 14 villages participated in batches contributing 15000 cft of earth work. The water supply guarantee was restored. Moreover, action early in the season provided water for raising paddy seedlings on time. Canal was opened later.

The organisation process has followed the Paliganj pattern. The ad hoc executive committee of DLC was organised in a general meeting of irrigators. The ad hoc committee completed organising VLC in all the villages in a span of

just two to three months. The regular DLC was constituted by the elected VLC chairman who reconstituted the Executive Committee of DLC. They made two changes in the ad hoc DLC while doing so. These organs have discussed and debated the MOA and the MOU of Paliganj in a series of meetings. That model was finally accepted with one rider in MOU that the water rate would be payable only after the court cases are disposed off and as per their direction. However, registration of the FO is yet to take place.

The FO has so far only been undertaking some repair works. The VLCs are also engaged in raising internal resources. It is not yet engaged in operations nor steps towards making operation plan for the distributary has been initiated. The performance of all functions is yet to materialise. It needs to be noted that the DLC has improved its bargaining power with the state administration in relation to canal water supply.

The work is at present in a crucial stage. The WALMI activity is still required to make the FO fully operational. However, the state ID and WALMI have no specific programme budget to pursue the work. A setback is expected after ISPAN completes its project.

Jamunia Branch Canal (Dhawahi Sub-Distributary)

The Dhawahi Sub-Distributary takes off from 7.22 km. of Jamunia Branch Canal, which is part of the Gandak Project. It has four minors and eighteen water courses, of which five water courses take off directly from the Sub-distributary. Contrary to the Paliganj command, which had serious problems of inequitable water distribution between the head and tail reaches of the distributary, on account of inadequate supply, this system does not suffer water shortage.

The WALMI, Bihar entered this area in November 1990 and attempted to organise the farmers. For this purpose a meeting of villagers through Gram Panchayat heads of the 13 villages under its command was called. They readily agreed to form an FO, and the heads of gram panchayat were given the task of forming VLCs with five to eleven members in each village. The chairman was to be member of the DLC.

The initial ARP activities continued up to September 1992. The work remained suspended, thereafter, till it was restarted under ISPAN. Unfortunately there were staff problems of ID so that the area did not receive the attention required. The work was confined to one Minor and two adjacent water courses. Apart from the agencies collaborating in Paliganj the collaboration of Gandak CADA was also enlisted. The ad hoc sub-DLC and

VLC did function all the same and the FO renovated some of the damaged channels and some desiltation of canal bed was also done prior to kharif 1993. There was effective collaboration in water distribution also.

The project was taken up as a replication of Paliganj and has not worked. The reasons are varied. The ARP team did not make a discriminatory evaluation of the location of this project. The system is in a high rainfall area, the main canal has no shortage of water, and CADA has invested in further improvements. Farmers are accustomed not to invest in the maintenance on their own. However, problems that need greater FO involvement are siltation leading to short discharge, reaching water to tail-ends and over irrigation resulting in fall in productivity. This will require more intensive work programme addressed to problems of water-affluent area and approach, perhaps, through agricultural improvement route.

Command Area Development Authority

The CADA programme in the state is governed by central government directives. The authorities have been organised in four major irrigation commands in three out of five agroclimatic sub-zones. Kiul-Badua-Chandan, CADA is spread over three major irrigation systems. The CADAs are linked with agricultural development, and Minister of Agriculture has them under his charge. Productivity increases and better returns through OFD work, better water utilization, adequate input application, extension of agriculture technology and post-harvest activities at farm level are its charges. The statute relating to CADA has an enabling provision for greater involvement of farmers. There is no specific mention of FO as such. The priority to organisation of farmers, its promotion for better water utilization and assumption of water management responsibility by it was initiated only in 1984 with the Central WR Ministry approving pilot schemes for the same. CADAs in this state also initiated some effort in this direction. However, the progress and experience is nominal. An evaluation by AFC of all the four CADAs between 1989 and 1993 has not provided information on this aspect. The available information has, however, been compiled and is provided in Table 6.

A brief study of farmers organisation in Gandak Command Area Development Authority was prepared. About 41 cooperative irrigation societies have been registered within this command under Bihar Cooperative Act. Out of them only about two are functioning at present at various levels of performance. Even in respect of the functioning societies there have been episodes of discontinuity ascribed largely to the lack of interest taken by the line agency. It was also experienced that CADA functionaries alone were not able to handle the critical problems of water delivery. The role of ID was crucial. In fact,

there has been no formal management transfer. The control of Minor turn out was never made over to FO There is no MOU defining the obligations of parties. In the CADA, if FOs are to remain functional the need for a tripartite memorandum of understanding between ID, CADA and the FO is indicated.

Table 6
FOs in CADA

| CADA | FO Year | Formation Dormant | Active/ indifferent | Reasons for performance |
|--------|------------|----------------------|------------------------|---|
| Gandak | 41 | 1987-89 | 2/38 | 1. Insufficient leaders |
| Sone | 14 | 1993 | Not operational | 2. Attitude of Line agency |
| KBC | N.A. | N.A. | N.A. | 3. Lack of motivation |
| Kosi | N.A. | N.A. | N.A. | 4. Lack of clear policy 5. CADA dependency |

The farmers organisation in CADAs have been very receptive to collaboration in construction. However, once the construction phase of OFD was completed the leadership of the FO became in-active. Sophwa Minor saw the promotion of FO in December 1978. After remaining dormant, it was again revived in May 1987. However, the FO was looking to Gandak CADA for funds even to repair damages and in its absence, it is again not functioning. The youngest FO in Marwah Minor was registered during 1989-90. It could not become operationally effective since the line agencies adopted an indifferent attitude. It was found that farmers have shown initial enthusiasm in forming societies. However, this enthusiasm was not sustained for undertaking operations, M&R and internal resource mobilisation for the same. There has been productivity increases where FO started functioning. That was still not adequate to sustain them in spite of actual reduction in production after FO ceased to be active.

The sustainability of the FO was found to be directly related to dependable water supply. The dependability of supply was related to the higher level system. The second most important element was the quality of leadership generated in the farmers organisation. The construction phase throws up self-seekers also and that was found to be the case in some of the societies. The third element was the quality of leadership provided by the field functionaries of the line department supplying water. The final point was a system of monitoring of performance for introducing discipline within the FO and the line department and also an appropriate system of communication between them.

Perhaps a minor which has command area of a little more than 200 hectares was small for the kind of interaction required between the line department and the farmers organisation. Its bargaining authority was limited and confined to CADA for technical advice and subsidies for OFD and agriculture development activities. It was also not possible for CADA to promise stable finances through sharing of the water rate that is being forced in the ARPs. CADA, without the direct authority of the owner of the system, has proved unequal to the task.

A comparative sheet on the study of half a dozen FOs functioning under CAD programme is in the Annex G. The reasons for the collapse of these societies vary in detail. Two factors, however, remain prominent. Firstly, the societies were not able to generate effective and dedicated leadership that saw its job as more than merely establishing link with CADA. Secondly, the ID as the owner of the system did not own these societies and did not give the support required for sustainability. The answers to these problems would lie in organisational and procedural changes that secures the recognition and support of ID on a continuing basis. A rethinking on a major reorganisation of irrigation set up in the state providing for unity of command is necessary to achieve a consistent policy package for farmers managed irrigation system.

Minor Irrigation

The state government has so far transferred 677 large tubewells to village panchayats. This is roughly 13 percent of the total number of such tubewells in the state. This poor outcome has forced state government to authorise transfer of the tubewells to the FO of users also. However, the modalities of FO formation, legal status and the system of operation of agreement between the FO and government has not been spelt out. Officials appear to be reluctant to take action for the following reasons:

- Tubewells require dependable supply of electricity which is problematic in Bihar at present.
- They are suspicious that the panchayats will not be able to finance the running of the tubewells.
- The authority for fixing and realising water charges has been vested in the panchayat without any limitation. There is an obvious reluctance for them to engage in this activity. They have no experience in managing any resource raising exercise.

- Most tubewells are lying inactive for a number of years. The panchayats are not confident that they would be able to revive and run them when the government failed.

Two hundred and forty-eight lift irrigation schemes have so far been transferred to the panchayats out of a total 2080. Problems similar to those in case of tubewells have appeared. Lift irrigation schemes are in areas of poor productivity. The river system are not perennial and multiple cropping is not possible everywhere. An in-depth study of management transfer implications is called for.

In the case of these minor irrigation schemes, the decision of government was taken without first creating the infrastructure for the local authority or for user FO to take over these schemes. There was also lack of adequate time to build confidence amongst the proposed management group in undertaking the task and running these enterprises. The line department field functionaries are also not keen on such turnover and the district collectors have difficulty in discharging this responsibility. A general policy of management transfer or turn over would seem to be inadequate to meet these requirements. The result, could, perhaps be different if efforts were simultaneously made to organise farmers, to make them work in partnership with the minor irrigation bureaucracy and then to turn over these schemes to local authority/user groups. The modalities need to be worked out in the light of field conditions, farmers views and management problems specific to these schemes.

The MI Department is directly managing a large number of flow irrigation schemes. These are community schemes of less than 2000 ha commands and were expected to be managed by the beneficiaries. The beneficiaries were expected to pay part of the capital cost to government. None of these stipulations have been met. However, the schemes are in poor shape since repairs and maintenance are not satisfactory and farmers cooperation is not forthcoming. This should call for an organisation building approach as emerging from this report.

The Bihar Panchayat Raj Act (1993) provides for transfer of all MI schemes to local panchayati raj authorities. The MI Department has proceeded to comply with this since it is the constitutional mandate. However, PRI would face problems similar to that of government. The resources at their command may be smaller than with the state government. An approach to FO management for PRI to consider and operate needs to be evolved. The outlook is for the PRIs to work with FO for a more efficient and economic use of water in MI schemes.

NGO - FO Group Tubewell Management

A number of NGOs took up irrigation development programme in Bihar after the disastrous drought in 1966-68. Most of the work was confined to open wells and tank programmes. Some of the programmes were in providing deep tubewells. A more successful programme was undertaken by Vaishali Area Small Farmers Association (VASFA) which selected 14 villages in two adjoining blocks of Vaishali and Saraiya in north Bihar. Subsequently, this association helped 15 more associations which came up in the districts of Vaishali, Muzaffarpur, East Champaran, and West Champaran all falling within the GCA of the Gandak irrigation system. A case study of VASFA is in the Annex H.

VASFA did not receive any support directly from the government budget. It received funds from Freedom From Hunger Campaign India (FFHC) and its successor bodies who mobilized donor assistance from foreign NGOs. It also availed of bank loan for putting up group tubewells in the area. The work was initiated by FFHC headquarters through a volunteer deputed in the area. He prepared a feasibility study and carried out extensive discussions with the local farm leaders. Since most of the farmers in the area were marginal, a consensus emerged that only group tubewells will be feasible and marginal farmers should be entitled to be the members.

The preparation of ground proceeded by organising group meetings in the villages as also general meeting in the area with the broader objective of agriculture development and food production. The process continued for more than a year. The VASFA was finally registered in 1971 under the Societies Registration Act. After its registration, a central FO proceeded to identify villages and the groups of farmers who were willing to join the group tubewell programme. The 14 villages contributed approximately 700 members and 36 group tubewells emerged in the process.

Organisational Set-up

VASFA has a 3-tiered organisation of land owning members which were the original members of the tubewell committees. The tubewell was to be run by a group of three persons constituting the Informal Tubewell Committee. Two of the members namely the group leader and the organiser were directly elected by the members whereas the third one namely the tubewell operator was nominated by these two. A group of about 12 tubewells falling in four to five villages were clubbed to form a zone. An informal executive committee of the zone consisted of all the group leaders and was headed by a chairman. The chairman of the zonal committee was, however, elected directly by all the members within the zone. There was no registration of the tubewell committee or the zonal committee. Finally, there was the VASFA executive committee

composed of the chairmen of the three zonal committee becoming the vice chairman, a treasurer nominated by FFHC/ PADI/CAPART all group leaders of tubewells and headed by a chairman. The chairman was, however, directly elected by all the members. Thus the only one formal Association was registered and all legal authority were drawn by other two levels by virtue of being member of VASFA.

Functions

The core function of VASFA was irrigation, at least initially. However, it is an organisation for improving the economic status of the small and marginal farmers through farm and off-farm activities. It has taken up a large range of activities that will help integrated agricultural development programme and assist improved incomes. In the process, perhaps because the expansion was at an early stage, performance of irrigation itself has suffered to some extent by now.

All the same VASFA had succeeded in promoting 15 more organisations functioning on the pattern set by it and they are all surviving. The sustainability for more than 20 years of an organisation of small and marginal farmers is a remarkable achievement. There are adequate lessons in the potential of the farmers organising and managing their functions, their eagerness to build their capability and the commitment to improving their economic and social status.

Lessons Learned

VASFA is not a government management transfer experience. However, it is a remarkable achievement in which a government-sponsored organisation supported the creation, the consolidation, the extension of farmers organisation for developing and managing its irrigation system and irrigated agriculture. Leadership selection was the more creative undertaking and it has been proven by now that availability of good leaders can alone make the success of farmers organisation. Another lesson is that the work once started should not be taken as the end of the organising process.

Motivational efforts for sustaining the organisation are as important as creating it and training in management as also attitudinal changes can alone keep the organisation healthy. A very important lesson is that a stable source of finance can keep the activities going. Farmers are good contributors of money and reserve is always required. Building an initial capital to function as a revolving fund or to generate a regular income for supplementing farmers contribution helps sustainability. Too many formal tiers of organisation are superfluous. The macro level organisation as an formal unit is able to get better cooperation from its lower units rather than the other way round.

Outlook

Organisations were initiated and organised in an era when the development philosophy was different from the current liberalisation phase. The system has undertaken a major review of its activities so far so as to chart out its course for the future. This would recommend a periodic evaluation of the totality of the philosophy, objectives, functions of farmers organisation for it to face up to newer challengers that appear from time to time.

VASFA is essentially a farmer organisation. It is treated as an NGO since it is not a limb of the government. As an organisation, it has been the example to others and it has developed infrastructure that helps other such organisations. It retained the initial volunteer introduced as an honorary consultant. It has by now developed infrastructure that goes beyond irrigation. Possibly all FOs are NGOs in one sense. VASFA experience does provide an insight into the capability of farmers to organise and manage irrigation which ultimately leads to wider concept of irrigated agriculture. It also provides an example where the land owners have subsequently admitted landless labour into the membership of the organisation and added the creation of off-farm activities to its functions. The core function of irrigation still remains its trademark but irrigation had been the means for a wider perspective of the role and function of farmers organisation.

Organisational and Procedural Changes

Scope

Organisation and the structure of irrigation set up is a creation of the nineteenth century. Its functions and activities have changed substantially and expanded considerably. The legal frame work, the rules, the operational circulars, the forms, the inspection procedures provide for a high level of bureaucratisation in an era where irrigation service has reached the farm-gates. All the details of the emerging complexities could not be explored since an ARP on OPC could not be implemented. This section confines itself to issues that the organising team faced and that were the organising team faced and that were articulated by the farm leaders in the course of the organising process. In the farmers camp of Paliganj held in April 1991, the need for organisational and procedural changes were specifically recommended to government.

Subsequently also rigidity of tendering system for award of work, authority to change water rotation, permission to desilt and repair canals have created as many irritants. There is lack of formal as well as informal means of group interaction between canal managers and the water users. Present grievance

management system has outlived its utility because of the volume of work and level of cent realisation. All these issues are capable of solution only through structural change in the relations between the system and its users. This section lists the problems faced at the field levels though solutions lie in changes at the field as well as the head quarters level. Since management transfer has not so far taken place in the state the area covered is the minimum.

Policy Awareness

The line functionaries were found to be as much sceptical about the outcome of the whole exercise as the farm leader initially. This was due largely to a lack of clarity in policies, strategies and instruments regarding farmers organisation management. No one in the field was aware of the directions of 1987 National policy in this regard, since the policy announcement was not followed up with any operational instructions. ID functionaries were not assigned any specific tasks for putting that policy into practice. Even ARP was taken merely as an externally-funded experiment with no immediate consequence for the work of ID. The major task, to persuade the ID functionaries about the importance of FO in irrigation management in terms of that policy, has remained unimplemented.

The task was not easy. The state ID had issued instructions during 1986-87 to form farmers committee of a consultative nature at all operational levels of water distribution. This was not given the attention and urgency required perhaps due to absence of adequate monitoring mechanism for follow-up action by the field formations. The state government has now announced a state water policy in May 1993 as a follow up to the National water policy 1987. FO involvement in water management is an important component of this policy. However, no operational instructions have so far been issued. There is lack of awareness in the field about the action to be taken and their role in it. This was reflected in indifference to this part of the policy and was a great handicap in pursuing the ARP activities.

In terms of strategies and implementation procedure irrigations departments, both major-medium as well as Minor as yet unprepared. The committees formed to monitor the progress of present study has already brought this to the notice of higher secretariat authorities. However, there was still no effort at working out an operational circular and regular monitoring mechanism to promote and pursue FO work.

The performance of CADA under the centrally sponsored pilot project has already been noted. Even where FOs have been formally registered, they are not involved in canal operation, maintenance or water rate collection. The performance so far has not created an environment for a wider movements for

operationalising the intents of the National Water Policy (1987). The task is not related to that policy since an integrated approach by WRD and CADA was not visible on the ground. This duality of owner-manager of the system and the CADA does not seem to work. The owner of the system alone was recognised by the farmers for their water delivery and distribution. The separation of the two in the field would seem to have outlived its utility.

Organisation

The Sone system does not have minors and water courses as defined for assessing potential and constructed in newer projects. Village channels take off from the distributaries. Paliganj Distributary with a GCA of 12,000 ha and cropped area of 6,000 ha was the charge of a junior engineer. In due course, an Assistant Engineer and four junior engineers with supporting staff have been added. The overstaffing at this level has increased costs without adding to efficiency. The farmers openly attributed inefficiency and deterioration of the physical works to indifferent staff response. This has only the reduced funds for physical maintenance and calls for a change.

Even more serious was the gradual erosion of the process of interaction between the ID functionaries and the irrigators. Grievance management was at a discount. There was an attempt at blame throwing on one another on the part of the two partners in the enterprise, namely ID staff and the irrigators. The WALMI team undertook the task of restoring trust and transparency in this relationship. It also tried to bring about lateral communication. Thus, officers from Executive Engineer downwards became part of the regular meetings for evolving operation plan as well as resolving water conveyance and distribution problem. Higher level functionaries also contributed to this process. Restoration of this interaction has subsequently helped the formalisation of FO and its sustainability so far. The FO was found to be more than ready to reciprocate.

Between September 1992 and July 1993 a vacuum from absence of donor support for the FO activity appeared. As the ARP made progress, the Line agency continued to highlight only the shortcomings in the functioning of the informal FO. The positive contributions were ignored. The FO would have done better with selection and posting of officers of the right aptitude from the large cadre of the ID. Such officers are available. Adequate training for attitudinal changes was also found to be lacking. The implementation of management transfer policy would be helped by commensurate changes in the personnel policy as and when required. This is a new kind of work and a personnel policy to suits its interests was sorely felt. It was fortuitous that some of the field officers did commendable work but there were more cases of indifference. This problem cannot be ignored.

An organisation that is busy safeguarding jobs and farmers harassed in dealing with the many functionaries was found to be harmful to water utilization policy. A more compact organisation, charged with responding to an increasingly assertive FO and staffed with engineering and non-engineering manpower with commitment and motivation towards this objective was repeatedly brought in focus.

Legal and Procedural Problems

The fact that the Bengal Irrigation Act (1878) did not specifically provide for structured users group approach was repeatedly raised at all levels of the ID field bureaucracy. Management transfer was being implemented in MI schemes without any specific law. CADAs were also undertaking such activities in the major river commands. It was pointed out by senior officers of ID that legal weakness could create problems for the government accountability both executive and legislative. The joint application for water would appear to be a short-term device to overcome such a lacuna through amendments in the rules. Ultimately, the irrigation act itself will be required to be brought in line with the national water policy commitments. This will remove the kind of doubts repeatedly raised and the lukewarm support given by the proposed restructuring of irrigation administration through FO. Any structural change would, in many case, need major changes in law since the present structure/organisation and functions is part of the irrigation law and rules enforce.

The FO did not have serious doubts of this nature and showed total commitment to improving management based on a workable MOU with ID. Its principal worry was the risk of undue interference by ID functionaries in day to-day affairs concerning O&M. There has been no occasion so far to test if absence of a straight forward legal framework for FO would create serious problems in operations of FO. The CADA experience does indicate, however, that this was so in Gandak CADA even when it was headed by a senior irrigation engineer.

The budgetary and financial procedures were found to be injurious to O&M. Year after year, funds were made available for repairs but could not be used due to tendering procedures, and delegation of powers. Allotment of work by nomination is not available. FO could have been of great assistance if they were given the task without tendering formalities. In one instance, it was tried in Paliganj and was found to be cheaper with better quality of work. Because of changing cropping pattern and the limited closure period of canals, the need for simplification of the procedures has been sorely felt. FOs are waiting for such a change.

At the end of Kharif 1990 a breach in the upper reach of the Paliganj main distributary took place in village Pipardaha. The failure of the ID to undertake emergency repair led the chairman of the DLC mobilise local labour which repaired the breach. The DLC was later paid rupees 3000 for the work done. The labourers were disbursed Rs. 1800/- out of this amount as per local rates. The savings so made was used for repairs in the system in other nearby villages. FO initiative saved an emergency. This was indication of farmers changing perception about the status of the distributary, and their commitment to maintain it in cost effective ways.

However, it was found that ID functionaries cooperated in FO carrying out essential repairs on their own. Thus even without formal turnover, voluntary labour and ad hoc cash contribution have led to better upkeep of the system and improved delivery of water. A change in financial procedures may thus generate greater interest in systems improvement as jointly agreed to between ID and FO. Joint management of budgetary allocation for O&M from the initial stages was found to enhance mutual understanding and self-confidence of FO in developing competence in fund management.

In the absence of formal turnover, the volume and complexity of administrative procedures have not been put to test yet. However, considering the nature of FO and its commitment to cut down bureaucratic functioning and paperwork, a through re-examination of these procedures would be worthwhile. This will have important bearing on sustainability since FO executives may be reluctant to spare too much time for managing volumes of paperwork, or catering to demands of too many reports, returns, and forms that have no relevance for efficient operation of the system.

Emerging OPC Issues

The management transfer policy would indicate a major structural change in the present framework of law, rules, administrative structures and procedures of work. This will require a reversal of over centralisation and excessive bureaucratisation trends of the past. The ID functionaries were prone to raise serious doubts if the FO would be able to manage the complex system. The local authorities, namely the panchayats, have expressed reluctance in accepting transfer of lift irrigation and tubewell schemes from doubts about possibility of success where government engineering establishment failed.

The proposed structural change has to proceed from this failure of the present system. The policy commitment has to be more firmly rooted and its implementation positively monitored. The farmers were clearly frustrated by the doubts raised about their commitment and competence to manage systems where their interests are directly linked.

The authority for such a change process does not lie in the field. The field organisations today are dependent on the headquarters for guidance as well as monitoring. The farmers in the ARP came in contact with the top-most engineers as well as the minister for positive thrust to their activities. The process of formalisation through MOA and MOU was expedited only when committees at the level of the secretary of WRD and engineer-in-chief were established. This framework at the headquarters would be necessary for pushing the work further. The farm leaders and FOs are happier to be involved in the change process at the level that determines the quantum, the quality and the pace of that change.

The owner and the managers of the system, WRD and the MI Department, are the ones to bring about the same. Simple government orders as in case of lift irrigation and state tubewells do not work. Failure of such orders may strengthen the trend towards a reversal of the policy itself. The managers role is material. They seem to harbour doubts about the impact of the policy on their powers as exercised so far, on accountability, and on the volume of cadre to which they belong. Early answers are presently not needed. These are recurring issues. In fairness it was found that a fair number of managers see no alternative to the proposed management transfer. They did not consider the present system of dealing with individual irrigators workable. The new institution building approach has genuine backers amongst the system managers. There is clearly the need to tap that manpower and to put them on the task of organising farmers for management transfer of distribution system. The needed infrastructure of incentives and training needs to be strengthened to that end.

Human Resource Development

In the course of carrying on intervention towards participatory management, the need for training in skill development as well as attitudinal changes was felt. WALMI, Patna was already conducting training programmes for assistant and junior engineers. The content and the style of the training programme was enriched from the experience in the field reflected in farmers perception how bureaucracy should function. The demand of joint management with FO became important ingredient in conducting these training programmes. It has to be noted, however, that WALMI has not been able to develop so far special training modules for irrigation functionaries addressed to farmers managed irrigation system. No joint programme for ID functionaries in the field and farm leaders have been organised.

As time passed the need for interaction of the farm leaders amongst themselves and with WALMI team appeared. Shorter period training program was organised for them. This was based partly on the requirement of the farmers as expressed by them. As the possibility of turnover appeared, they specifically wanted training in the management of FO and in accounts. Thus, the felt need of FO started influencing the core content of training programmes.

It was becoming clear that participatory management of irrigation required a participatory management of training programme. Farmers needs and perceptions had to be taken note of their experiences and problems adequately answered, local variations in social and economic spheres had to be analysed and addressed. The experiences of training organised required to be properly tabulated so that its updating was taken up from time to time and it remains relevant under fast changing situation. Ultimately, a three-tiered training system has emerged, namely, WALMI training for selected FO functionaries, DLC participatory diffusion of learning process among VLC leaders, and final on job training in skill and management for all those involved in the task. This has to be properly classified and formalised after more experience is gathered.

The courses organised at WALMI headquarters for farm leaders for the ARP areas are given in the Table 7. WALMI is not involved in training for MI works management or for CADA. There is, thus, a grave risk of material differences in the contents and the style of training. An integrated system for development of training module, research in training methodologies, extension and diffusion of training in the field has been found to be a clearly established priority for the state.

The organising process has established the need for motivation and every step and stage in the building up of FO. This is merely the initial stage come priority areas for training were indicated by FOs in Paliganj once it was clear that

government was moving towards management transfer. Capability building was another important ingredient in the expansion of functions of FO. The full implications of training in skills and managerial capability is yet to emerge. Finally, actual management transfer has not taken place in ARP areas. However, VASFA and CADA experience would indicate that regular process of updating of knowledge and renewal of contact with organisations working in irrigated agriculture, is called for. Thus, the full agenda of HRD for FO managed irrigation system is yet to emerge.

Important Issues

The experiences related so far have thrown up some general issues. These issues do not seek any immediate resolution. The purpose of underlining them

Table 7
Training FO Officers

| Year | No. of Training | No. of VLC Members | Main Subjects |
|------|-----------------|--------------------|--|
| 1989 | 1 | 22 | Modern irrigation practice and agriculture techniques, Participation of Farmers' in government managed irrigation system and need of FO for irrigated agriculture. |
| 1990 | 1 | 27 | Water management system Warabandi and Micro level planning for proper irrigation. Methods of seed production and processing and storage of seeds. |
| 1991 | 4 | 109 | -do- -do- |
| 1992 | 7 | 167 | Successful management of VASFA. People's participation. Human Resource Development/Community organisation. |

here is very simple. They are prone to raise controversies which at some stage can raise doubt about performance of FO managed system. The position should not really be so. Shortcomings so appearing have to be dealt with promptly and not become the cause for passing snap adverse judgement on the programme itself.

Sustainability

The experience and observations recorded here span a period of more than two decades of efforts towards farmer managed system. This is different from the philosophy of turnover that have received larger currency in the decade of the 80s. The experience so far of turnover has been on small systems which are in the nature of community irrigation projects or very small segments of large project such as a minor. Turnover itself has been used in different connotations ranging from ownership to a process of joint management. In the government managed systems in India, ownership transfer has not taken place. Management transfer has taken place under a new legal instrument that makes the FO a subordinate unit of the line department. The sustainability of FO effort has to be seen in this context.

VASFA and its sister associations have survived more than two decades. The length of survival is an adequate measure of their sustainability. They have now taken a major review of their performance, so as to adjust to the demands of changing development philosophy, changing rural scenario in their command and the demands of their members. This review may bring about a qualitative change in the structure, functions and the composition of the associations originally designed. Thus an element of periodic adjustment to changing situation is another important component of sustainability. A serious problem faced by these organisations is in the field rural leadership. The structure of leadership has emerged as the most critical factor in sustaining the various levels of organisation. The leaders tend to become disinterested or their quality deteriorates. Simultaneously the process of renewal or replacement is thwarted by inaction or obstruction. The fourth important element determining sustainability is in terms of quantum and the quality of services to improve the income and social status of the members. That is also an incentive for growth.

The CADA experience is very limited. It has to be noted that CADA could not transfer management of a system of which it was not the owner. It promoted societies which did not enter into contractual obligations with ID. The lack of interest and support from ID local functionaries was a major factor in turning the societies' dormant. A legal status for operating a system is an important ingredient promoting sustainability. CADA mandate provided for land and water development to support newer technologies of production.

In the process a host of subsidy linked programmes were undertaken. CADA undertook to construct even the field channels where farmers did not do so. The farmers accepted their roles as one of accepting government aid in increasing measure. They were not exposed to the concept of mobilising resources for maintaining the assets created, for undertaking activities for which government funds were not available and for building organisation. Financial

viability is an important element in sustainability and that was ignored in this experience.

The Paliganj ARP experience has now been sustained for five years. The episode of discontinuity between September 1992 to the middle of 1993 did not bring its work to halt. The important precautions built into process of organising included:

- creating awareness about the inability of the government to provide funds for the programme
- building of communication between the system manager and the system user
- participating in operation of the distributary which had no monetary implications to start with
- motivating the farmers to resource mobilisation for maintenance
- establishing a system of internal monitoring which could promote effective leadership at all levels of the organisation

The Paliganj message has been that farmers have to organise to get better services by mutual accommodation and removal of inter-village rivalry. ID can give them management of the system but they may not be able to provide funds on a continuing basis for normal maintenance. An important component appearing in the process is the organisation's bargaining power with ID. That effectiveness will come by the organisation remaining active at all levels, by their democratic functioning including renewal and replacement of leadership and by adjusting the functions and activities for the members to consider the organisation as relevant. These democratic values are an important ingredient for sustainability. Once they are undermined, the organisation will become under dormant or will disintegrate.

To sum up, the following critical factors would seem to be kept under close watch for promoting sustainability:

- length of survival with performance of assumed responsibility
- adjustment capability to face newer challenges and changing financial and managerial scenarios
- the quality and structure of leadership

- the evolving quantum and quality of functions and services to be responsive to members demands
- A formal legal status for authority to deal with members and Line agency functionaries.
- financial viability
- competence and effectiveness in performing bargaining role with ID and other concerned agencies
- responsiveness to democratic values in the conduct of the affairs of the organisation

Replication Experience

The expanding programme of FO with irrigation objective has to explore means of spreading the process rapidly. Replication provides the modality of transferring the process and the product from one area to the other or from one system to the rest. Bihar experience covers replication of the VASFA model in group tubewell, CADA model of outlet cum-VLC, and the current ARP model of Paliganj being tried in three other areas.

VASFA experience replication has been a success so far. Fifteen are in operation. All of these are in the same agroclimatic sub-zone and fall within the command of Tirhut main canal of Gandak project. The project commands were very small and manageable. All of them were born in a development environment where technical, advisory, and financial support was available from FFHC/PADI/CAPART. They worked in close collaboration with state agriculture and irrigation authorities. No clash between the two have been reported. Thus replication was possible because of similarity of agroclimatic situation, socioeconomic structure of participating groups and, positive attitude of the state extension authorities.

The CADA activities were based on a central pattern. A uniform model was proposed for all the irrigation commands. It did not adequately appreciate the impact of differences in agroclimatic situation, socioeconomic composition and the overall development environment in the different projects. Basically, it was not the experience in replication but uniform application of a single model. It has not worked.

In Bihar, ARP in the Paliganj Distributary was started in 1988. Other three ARPs followed subsequently. The Paliganj situation was similar to that in Garachoubey in the same irrigation system. Asarganj also falls in the same

agroclimatic sub-zone. Even though the distributary receives water from the canal taking off from Badua reservoir, the flow is supplemented by tapping local streams with community help. Generally, the present indications are that the Paliganj pattern will work. It does not seem to work in Jamunia in the Gandak command. The reasons are: a different agroclimatic sub-zone, sufficiency of water, greater dependency on the subsidy programme of CADA and, possibly, other institutional factor. The conclusion from this replication experience is that one model cannot suit all major projects or agroclimatic zones.

The Bihar experience indicates that replication of any model had to be approached cautiously. In a large state which has five agroclimatic sub-zones, there will be more than one model and more than one approach to farmers involvement in irrigation management. The work has to proceed on the basis of a thorough study of the agroclimatic as well as socioeconomic factors influencing the pattern of work, specific considerations that have influenced the relations between the system managers and the farmers, prospects of immediate benefit to the farmers and the activity that will bring that benefit for the start up of the process. Replication should not be taken as the means of universalising a success story here and there. The process of replication will pick up on the principal route taken in model building but will have to make changes that makes a model adjacent to the requirement of a given system or area.

There is a vital difference between replication and diffusion. Diffusion of a model in terms of process as well as product is essentially in contiguous area. It is a natural process of expansion of area. Replication is to an extent a transplant in a different area, in a different system and requires modifications. Any strategy of large scale promotion of FO and their involvement in irrigation management has to be built on these realities.

FO Jurisdiction

The government managed systems in Bihar proceeded on the basis of outlet cum-VLC supplemented by a minor level organisation in some cases. The choice were dictated by the general government instruction which was applicable to all the CADAs throughout the country. Deviations were few and far between. The government has tried to transfer large tubewells to users' organisations. During 1955-56, some 40 tubewells constructed by the agriculture department were transferred to sugarcane growers cooperative FO in the command of Bihta sugar mill. State government had to take them back.

Subsequently, government continued to expand state owned tubewells with no programme for transferring it to group ownership or management. Now, government has taken a decision to transfer management to village panchayats or to user groups. However, it is not clear if any organisational design has been conceived for management of these tubewells. The VASFA model can be tried.

A single tubewell may not, however, be a viable jurisdiction for an organisation. An area approach may ultimately evolve. There is no experience so far in respect of transfer of minor irrigation flow schemes. A number of these schemes were constructed on the assumptions of farmers sharing the construction cost and managing them as community schemes. That has not happened. A comprehensive approach to the jurisdiction of an organisation in the minor irrigation sector is yet to emerge.

Experiences in Paliganj and elsewhere have been variable. Initiative in Paliganj was taken at the distributary level. In Garachoubey the initiative emerged at the level of the branch canal and organising effort is proceeding on two distributaries of that branch canal. In Jamunia a sub-distributary has been taken up for the organisational work and in Asarganj it is a distributary. The important point is that the decision about jurisdiction was left to the users. They identified the location of the problem which determined jurisdiction. In every case that location is a single control point which supplies water within the command of the area so decided. The hydraulic jurisdiction has been chosen. However, this has been supplemented by a recognition of the village community since inter-village water distribution and conveyance problems have been acute in the state. This experience shows that the choice of jurisdiction when left to the users themselves helps in coming to the workable choice in which hydraulic considerations are dominant.

A hydraulic rather than a territorial organisation is the more appropriate choice for jurisdiction. Within the hydraulic boundary informal organisations at the lower level, either smaller hydraulic units or the village or a mix of the two is possible. The choice should, once again be left to the users. Finally, a more powerful distributary committee should take command and organise as few lower level units as is necessary to improve water distribution and provide opportunity for higher income.

Legal Framework for FO

The question of legislative support for introducing farmers organisations in water management has been persistently raised. Bihar major irrigation is still guided by the Bengal Irrigation Act of 1876. It provides for group application for water but not for legally constituted farmers organisation. The group recognition was built on 85 percent of the members filing the joint application for water which has been subsequently reduced to 60 percent. It was possible to mobilise that many farmers during a period when much smaller number of tenants were receiving water from the canal. At present the number of tenancies have increased manifold and mobilising 60 percent of the farmers for every application in a large area such as distributary is not easy. This was a basic problem with which the Bihar team had to contend.

The amendment or replacement of a law is a complex and time-consuming process, especially when priorities are not well focused. The work was, however, not proceeding without legal sanction. In Bihar, additional irrigation rules have not been framed for all the new irrigation systems. The policy of management transfer of tubewells and lift irrigation schemes did not proceed from any special legal sanctions for the same. It was found that a policy commitment of government and the will to act according to that policy on the part of the civil services was sufficient condition for management transfer to FOs. The Bengal Irrigation Act also provides rulemaking powers. The government could provide for farmers organisation to be given management transfer. It had, however, to fulfil the condition of at least 60 percent of the irrigators becoming its members.

In general terms, legal changes are necessary. The state irrigation laws are more than a century old. It must now address itself to new problems and new concepts of management. However, law alone is not sufficient condition for the organisational strategy to be implemented. Community preparedness to act is as important. Bihar has proceeded on that basis. The preparedness to take over a system is designed to put a pressure on the government to expedite management transfer. Both ends have to be guarded. The present law with minor changes in the rules will be sufficient for that purpose at the stage at which management transfer of government system is in the state.

A major legal overhaul may be necessary as work proceeds. This will have to concern, itself, not only with the present level of management transfer but with vesting of the powers of canal officers in FO the present structures and tiers of organisation, composition of the management team at the divisional level as a comprehensive service set up for FO, rules for development and monitoring of conjunctive use sources and association of FOs with higher levels systems that continue to be under direct government management. The need for legal changes has been noted since the second Irrigation Commission suggested it in early 1970s. The bureaucratic response to proposed changes will definitely improve with a comprehensive legal basis for restructuring.

Registration

Peoples participation has been an important element of the planning process in India in its implementation. Farmers organisations have also been promoted. However, formal organisation with a legal status have been largely thought of in terms of loaning requirements from the banks or other funding agencies. The experience in the state indicates that a formal organisation was necessary for a variety of reasons. Such an organisation assumes authority over its members legally and is the basis of its authority for dealing with the outside organisations.

In the present case, the WR Department gains advantage by dealing with a representative body rather than much larger number of individual farmers. The legal entity allows WR department the flexibility to take legal action against it. This facilitates management transfer of assets as also conduct of monitoring transactions. The farm leaders were, therefore, clear in their mind that legally constituted organisation gives them a status as well as authority and bargaining power with the ID. It helps them establish working relations with development, research, extension agencies in their work and makes for expansion in their activities.

The question that emerged was whether the law under which registration should be preferred. Bihar Cooperative Act was available. Single purpose cooperatives in a number of sectors such as sugarcane, dairy, fisheries and land and water management were available. The Societies Registration Act (1860) as applicable in Bihar also authorises registration of societies in agriculture and rural development sector. VASFA was registered under societies registration act. The Paliganj Distributary Farmers Committee have also got it self registered under the Societies Act. Garachoubey and Asarganj societies have decided similarly. The reasoning was that the functioning of the cooperatives known to the members did not attract them. They did not feel that irrigation management will give them lot of profits for sharing in forceable future.

On the other hand, prospects of money making could harm the exacting service orientation, they have in mind for the organisation. The organisation has not shown much interest in institutional credit at present and are engaged in the task of local resource mobilisation. VASFA did make use of commercial bank loans. Cooperative credit is not the only option. They considered registration under the Societies Registration Act as appropriate. At present, it appears that this will be the pattern in Bihar in cases where FOs have the choice.

Chapter 3

LESSONS LEARNED

These lessons are drawn directly from the experiences of the previous chapter. Bihar does not yet have any experience of final management transfer or turnover. However, there are suggestions of expanded participatory irrigation management in Bihar's future.

Farmer Organisations

FO efforts create a relationship of trust and mutual support between ID functionaries and farmers and facilitate solution of problems in operation and maintenance.

For farmers, the availability of water is a matter of prime concern. Inadequate maintenance and faulty operation of the water distribution system have seriously constrained water availability for crops. The absence of regular and assured water supply forced farmers to interfere with the physical infrastructure and with operations. The line agency in the study areas failed to prevent them. In such a situation, the farmers became the de facto managers of the system. A participatory approach promises to reverse this situation whereby farmers develop a stake in the system and its operations. In Paliganj, a drastic change in attitude appeared only when joint management was introduced and the line of communication with the ID restored. In three years, the area covered increased by more than 20 percent and production by more than 30 percent.

Better communication and transparency, even without system improvement, can facilitate FO involvement in operation and maintenance.

In the absence of effective communication, different actors in the management of the irrigation system are likely to entertain inaccurate notions about each other's position. The line agency blames the farmers for causing obstructions in conveyance. The farmers blame the line agency for being negligent and impervious to their needs for water. When the two sides share their constraints, mutual accommodation leads to remedial action. This process of the identification of constraints helped partners act with a sense of purpose in Paliganj even during drought situation in 1991-92. When the farmers and the ID established effective rapport, the farmers began to appreciate the problems WRD faced. Subsequently, they decided to involve themselves in the operation of the system, mobilised local resources, and undertook necessary but minor

repair and maintenance work to improve in water delivery. This process facilitated the course of joint management. A similar process is taking place in Garachoubey and Asarganj.

Institutional mechanism for performance evaluation can facilitate emergence and smooth replacement of competent leaders.

In a programme seen to be launched by the government, the elite farmers and opinion leaders tend to grab the leadership positions. However, when their performance, directly or indirectly, starts getting evaluated by their constituents, they have options either to be effective in their task or to withdraw themselves from leadership. Both situations are conducive for the emergence of active leaders. CADA cooperatives could not create such conditions. In Paliganj and Garachoubey, when the project was initiated, the wealthier and better educated farmers got themselves inducted into the leadership role. Subsequently, when the questions about their performance arose some of them started involving themselves in greater measure. A few, voluntarily made room for others who in their opinion fitted the bill.

The distributary being the most convenient conveyance unit for farmers to come in contact with the ID bureaucracy, can be taken as the more appropriate unit for the jurisdiction of the FO.

For the farmers the distributary is the most critical unit of conveyance. It is the dependability of supply at the head of the distributary that can guarantee supply to field outlets. Any degree of repair and maintenance at the lower levels cannot ensure adequate supply of water if the distributary is in disrepair and is being operated inefficiently. The farmers in Paliganj Distributary focused their attention on the distributary. This produced a visible change. Water could reach parts of the lower systems which were in distress.

Early emergence of an ad hoc macro level farmer organisation can accelerate the process of farmers themselves organising farmers at the micro/village level.

Introducing short-term catalysts from outside the area to organise farmers has in-built limitations. They are not able to quickly assess or appreciate the politics and potentials of the community. When the farmers from a distributary formed an ad hoc body and took on the responsibility of organising farmers at the village level, the task was found to be speedier. However, the leaders of the 'macro body' consistently undertook mobilisation activities to facilitate an effective micro level organisation. In Paliganj, Asarganj, and Garachoubey, when the DLC members took on the responsibility of organising VLCs, they were able to do so expeditiously. At the same time when the DLC members

organised intense preparatory activities, they were able to create more effective VLCs. Wherever such activities were not undertaken it had an adverse impact.

Frequent and intense interaction between the VLC and DLC can help invigorate the functioning of the FOs.

The strength of the FOs would depend on the sharing of responsibility and resources of the different levels forming an FO. This was seen in the decision to keep the irrigation revenue share of the FO with the DLC but the additional resource mobilised with the VLC. Following from this, VLC were to undertake simple maintenance within their jurisdiction whereas DLC would take up more important inter-village maintenance work. DLC in Paliganj also took up a mid-term review of performance of VLC which helped many of them becoming more active. Some VLC chairmen changed in the process. This active democratic process is the essence that makes participatory management beneficial.

FO capacity-building through informal involvement in operation and maintenance can help improve system performance and thereby accelerate the process of formalisation.

Informal FO involvement in canal operation and maintenance helps the partners understand the constraints beset in operation, analyse each others difficulty and potentiality and make necessary adjustments before relations are formalised. This provides them the problems of canal capabilities and limitations. In Paliganj and other distributaries, such collaboration led to walk through survey, identified maintenance needs, prioritized them and provided voluntary labour and money to improve the system performance. The early flow of benefits to farmers and reduction of problems for manager created a fund of goodwill. This development gave the FO confidence to scrutinise and finalise the MOA and MOU of their choice and accelerate the process of formalization.

Increased access to water for the lower reaches through FO involvement can help raise the level of confidence in the organisation.

The main reason for the scepticism of farmers in the lower reaches stems primarily from the uncertain supply of water to them under present management. When the FOs mobilised farmers and undertook operations this question received priority attention in every project. They were able to widen their support base. The people of Pansui village in the tail end of the Bharatpura sub-distributary under Paliganj had virtually written themselves off as beneficiaries of the canal. For the last so many years water was not reaching them. Only when FO activities started did water flow down to their village. This development greatly inspired the villagers who reciprocated DLC efforts by

organising voluntary repair of the canal. The persuasive power of organised farmers can change the water distribution equity significantly and so also overall production of crops and income of farmers.

Awareness through FO activities tends to facilitate reduction in damages to physical distribution infrastructure.

The minor distribution system has been subject to extensive damages from excessive grazing on banks, removal of earth from canal banks, encroachment of canal lands, scrapping of grass and thus removing protective layer of the earthen banks. The erosion of the ID authority along with extension of systems to cover up to one Cusec command had made the task impossible. The FOs in Paliganj, Garachoubey and Asarganj have already taken up the challenge. The protection of the canal infrastructure is being regularly emphasised. The Paliganj DLC have issued written appeals in this connection. There is positive reception to these appeals. A reduction in the level of damage is visible. Participatory management is able to force realisation that canal is farmers own asset. Continued effort in this direction may achieve results through social discipline what has become a receding possibility through legal and administrative coercion.

The expansion of WALMI's role can help evolve newer approaches and methodologies for FO, OPC, and turnover.

Evolving user friendly management strategies for irrigation is a multidimensional exercise. WALMI, as a facilitator, has played this role. In doing so, it requires to try several alternative strategies with flexible working situation and adequate financial support. This has been lacking and the future of FO intervention activities is uncertain after donor assistance closes. Similarly, the exercise being multidimensional, it would require functionaries with multidisciplinary orientation. The experience of the Bihar WALMI suggests that it has suffered on account of absence of autonomy, inadequate financial support and lack of multidisciplinary faculty. It is, for the present, an appendage of the large Water Resources Department. There is no regular source of finances available to it for conducting the required activities. WALMI was established to provide wider R&D as well as extension training expertise in the irrigation sector. It is ill-equipped to fulfil that promise. The added objective of the present exercise will also suffer unless this shortcoming is removed at the earliest. The state does not have alternative to WALMI to conduct these roles.

Replicability can work only if specific conditions of systems have comparability.

Even though experience is limited, some preconditions of replicability have appeared. The North Bihar system in Jamunia sub-branch canal has not

responded to Paliganj model as Asarganj and Garachoubey have. Physical as well as social conditions are different between the two regions and they do not seem to have received adequate attention. Preliminary findings may indicate the agriculture development route to organisation with emphasis on water-crop relations, prevention of waterlogging, diversification to mixed cropping and flood proofing rather than water stress management. The mix may differ further in the plateau area. This will call for a variety in models based on suitable technological and social interventions. A minimum of five models for the five agro-climatic sub-zones in the state may be required. More work is in the state may appropriately be studied. This would recommend a cautious approach to replicability.

Improved finances for the system is key to sustainability and can be facilitated by empowerment of the FO.

It has become increasingly difficult to meet the rising cost of system maintenance. The farmers are not keen on contributing adequate sums when they perceive bureaucratic organisation as excessive, functionaries based and unresponsive, and physical infrastructure maintenance poor. The attitude change is remarkable once they are made a partner. Their claim on government funds may not have diminished but their willingness to mobilise additional resources is surely seen in actual contribution to maintenance both preventive and curative. As greater responsibility is given to them, the incentive to share incremental income for system improvement, can increase. CADA experience started with subsidy and did not work in the end. The ARP experience has stressed on obligations and appears to be working, even though in small and ad hoc measures so far. This has to be pursued since organisational sustainability and financial viability are like siamese twins.

Organisational and Procedural Changes

A clear cut administrative directive as a follow up of the national water policy and state policy on FO involvement can remove doubts regarding commitment to that policy.

The action research programme experience in the state discloses the outlines of a relevant strategy to operationalise the 1987 national water policy, reiterated in the state policy of the Government of Bihar. There is, however, need for elucidating the same, providing guidelines for initiating the participatory process, promoting organisation of the FO, helping formalise that organisation, assisting in operation plan formulation, trial and implementation and facilitating conflict resolution between the ID and the FO. As long as the ID does not take up seriously this task, assign functions to field officers and evaluate their

performance in this regard regularly the national and state water policies will remain largely on paper. Efforts to disseminate policy commitment on the FO alone can generate pressure for the policy to be operationalised from the irrigators end also.

Restructuring of the administration of the minor distribution system can help in facilitating better service.

The present administration at the levels of minor distribution system is looked after by different agencies. Water Resources Department, looks after the entire distribution system of major and medium irrigation and flood control and drainage. At the very place conjunctive water development works are looked after by the Minor Irrigation Department as well as Rural Development Department personnel. In areas where CADA operates, CADA personnel look after OFD work. The same farmer or farmers organisation is to deal with all these personnel. This has not worked and needs a drastic reorganisation. In the changed scenario, the Water Resources Department functions will be to provide water, maintaining adequacy and timeliness at the head regular of the distributary. Similarly the field channels, if at all constructed, have to be modified and looked after by the Farmers Organisations to enable them to draw maximum benefit. The role of the Minor Irrigation Department, CADA, and the Water Resources Department will change. They have to facilitate the proper functioning of the FO in respect of all works within its jurisdiction that has a bearing on water allocation, distribution and delivery to individual fields. Field administration and structure have to respond to this reality if the desired benefits are to accrue.

Proper changes in rules and procedures for involving voluntary agencies in FO formation as well as for taking help of the FOs in physical repair and maintenance with government funding can help in expediting the turnover.

The experience in the ARP areas has been that the present rules and regulations stand in the way of making use of NGO. An eminent NGO had expressed interest in participating in the ARP in Paliganj. Another one actually prepared a blue-print, mobilised farmers, and prepared itself for collaboration in Garachoubey Branch Canal system. The Water Resources Department accorded them status of a contractor and desired competitive bidding procedure for associating them in the exercise, even though there was no such condition from the donor/USAID. No NGO/voluntary agency will be prepared to subscribe to this procedure since they work as facilitators. Separate procedures will be required that facilitates voluntary agency/NGO participation in working out models of the FO including their promotion for takeover.

Proper maintenance and repair of the canal system can be facilitated by change in budgeting, fund allocating and tendering procedures, helping in utilisation of the limited time of canal closure for such MR works.

The financial year starts from April and ends in March, whereas working season extends up to June. At present fund availability becomes clear by the close of the period for opening the canals. After that, time for tendering, fixing agencies, getting the repair work done, measuring and finalising the same is so little that the budget allocated remains unused or may be even misused. For assisting in proper M.R. works, the budget allotted for the year should be allowed to be used beyond 31 March to 30 June in canal repair works in the phase of joint management. It has been the experience in the ARP areas that if the same work is got done by the FO themselves under the ID supervision, it is cheaper and of better quality. More so, as the FOs with their participation in management acquire a sense of ownership. The procedure change will be beneficial. There were cases both in Paliganj as well as Garachoubey branch canals where repairs could not be carried out and available funds lapsed in the absence of such facilities. Another alternative may be to transfer funds to the FO even during joint management phase and have the work done by it. A declared policy and changed procedure will facilitate good quality of work within the available time.

FO promotion efforts can be accelerated if plan funds are available.

External assistance is generally given in addition to the existing plan and non-plan programme. FO promotion and intervention in irrigation management in major irrigation systems was undertaken under the state policy by the WALMI but assisted by USAID. It ended abruptly and ISPAN took some time to get on the ground. In the mean time, the activity in the ARP was suspended since there was no support from the state plan for WALMI to undertake such work. The irrigators in the concerned areas were also disheartened. It is necessary that such situation is avoided. FO turnover is part of the national policy. It should be a commitment in the state as well as national development plans. The task involved is quite large. Therefore, a regular programme with reasonable procedure of work and systems of cooperation and coordination between various agencies and adequate financial resources need to be worked out, as a part of the five year plan of the state.

An implementation infrastructure for the irrigation sector can improve bureaucratic commitment to FO empowerment.

The ID has taken the work somewhat half-heartedly. The WRD minister actively interacted with the FO and the ARP team and gave encouragement. The WRD headquarters was receptive but not active. A state level task force for the purpose was belatedly set up and has performed well. Doubts about feasibility of the whole concept continue, however, to be raised by field officers at all levels. A change in the situation is possible only if a government level authority is put in position to seriously undertake necessary measures for implementation of policy.

Chapter 4

RECOMMENDATIONS

These major recommendations emerge from the experiences and the lessons learned in Bihar. They seek to promote the objectives of the national and state water policies and accelerate their implementation.

FO Promotion and Capacity-Building

A programme for FO promotion should be expedited by the state government.

Area coverage of irrigation has increased with same level of canal water supply, on account of FO intervention. Water distribution equity has also improved. There is smoothening of relations between the system managers and the system users. The overall result being positive, a regular plan programme of FO promotion should be launched.

The macro-to-micro process of formalizing a two-tiered FO should be adopted in the state for FO promotion and creation.

The task of FO formation is formidable, and the slow process has dampened farmer enthusiasm. Once farmers are willing, they should be trusted with the responsibility of completing the organising process. Government will be well advised to accept the FO in joint management so that irrigator leadership roles can be facilitated. A distributary level organisation approach will expedite coverage and capability-building.

The boundaries of the FO should coincide with that part of the irrigation system which has the most serious water distribution problems.

In old systems distributary control point is identified as associated with problems of distribution. In the newer system also water delivery at the minor head is made difficult at times because of faulty operation of the distributary turn out. The farmers in the command judge the problem properly and it is based on their experiences. The command of a distributary, therefore, is a better unit for organising farmers.

Locally evolved leadership should be recognised and supported by the line agencies.

Local government functionaries should be responsive to individuals who with consistent record of service and sense of involvement emerge as leaders. Emergence of strong leadership through the democratic process of renewal and replacement should be encouraged. The organisation should be encouraged to evolve mechanism of internal monitoring and evaluation to assist this process.

FOs should have a broad mandate of responsibilities and activities, although they are likely to focus initially on water management.

Core function should be operation of the system, equity in the distribution of water, up-keep and maintenance of the system and avoidance of waste of water as also resolution of conflicts related thereto. The activity related to crop planning and productivity as well as income generation will emerge from the improved management of water. In due course, agriculture related farm activities that can broaden membership should be added to its charge. Even non-farm sector activities should be taken up once capability is built. Premature expansion as functions should be resisted.

Resource mobilization should be one of the first tasks of an FO.

A healthy irrigation system will require additional finances for maintenance. The government has to ration money throughout the state and local priorities tends to be by-passed. The FO should be made to understand this compulsion to mobilize resources in cash and kind to keep the system healthy.

Organisational and Procedural Changes

Registration of FOs under the Societies Registration Act should be accepted by the line department.

The ID should recognise only one organisation for a particular area for registration under the Societies Registration Act.

Administrative changes in line agency operation are inescapable and should be undertaken.

The FO operation will involve a structural change in irrigation administration. This will require a transitional package of changes in procedures of the Government consistent with the status and autonomy of farmers organisation. There will also be a need to undertake detailed examination of the organisation

structure and present functions in the department. While an Administrative Committee should be formed as early as possible to look into the long term changes required, the changes suggested should be made without any hesitation as and when required. This will include rules for FO managed systems, improvements/modernization to be taken up in consultation with the FO, reports and returns, inspection and supervision and related activities. Simplification of procedures should be accepted.

The government should earmark budget provisions for accelerating the pace of FO activities.

The policy pronouncement so far have not yielded prompt results. The failure is on account of lack of any programme, funds in the preparatory phase of management transfer. The programmes are so far largely based on donor funds. It is high time to prepare and sanction regular programme and funds for such work.

The government should finalise a policy for the transfer of management responsibilities in irrigation management to FOs.

The present policy of FO involvement will require further elaboration. This report has worked out the modalities of organising farmers and making them sustainable. It has also provided some lessons in changing procedures. In the light of positive results the government should work out a policy and implementation package devoted exclusively to involvement of the FO in water management. This should be followed up by appropriate administrative directions to the field functionaries dealing with irrigation/water utilization.

The government should recognise the role of NGOs for promoting and implementing FO-related policies.

The task of developing an FO is a large one and it requires NGO cooperation. It will be necessary to elicit the collaboration of willing NGOs in this task. Suitable guidelines for NGO involvement in irrigation management and organising farmers for management needs to be evolved. NGOs have not played any role in government-managed irrigation systems so far because of deficiencies of policy and procedures. They should be treated as path finders in assisting government to work out viable alternatives in management at the right time. In this respect ID should have an irrigation sector NGO promotion policy. This follows from the national water policy objective to involve NGOs in management transfer activities.

Support Services for FO Promotion and Performance

Technical and management support for FOs from the line agencies should be ensured.

FOs should be extended organisational/technical by the line agencies. Such support may be gradually withdrawn.

Training modules for improving the capabilities of the FO and line agencies should be developed for use.

Committed farmers should be selected by the officers of the FO for training for making assessments of water rates, fee collection, office procedures, and maintenance of accounts. The line agency staff at the operational level should receive training to better handle their new roles. Training modules should be developed regularly reviewed and improved by WALMI/CADA.

The WALMI should be strengthened and expanded in order to meet an anticipated increased demand for training.

The WALMI is already inadequately staffed to fulfill its present objectives. The expansion of FO-managed projects in Bihar is certain is put a further burden on the institute.

The WALMI and CADA should be reoriented to their expected new roles and requirements.

With the spread of FOs to larger areas and management transfer of irrigation systems, the role of, and load on WALMI will expand rapidly both in field of Action Research and strengthening the FOs. In this context its capacity must be developed to meet the challenges of the emerging situation. Part of this load can be taken over by CADA or NGOs. Adequate financial and organisational support necessary for meeting these objectives should be extended to these organisations by the state government to upgrade the infrastructures, to make it an interdisciplinary outfit and to acquire greater flexibility in its operation. With proper support and full fledged autonomy the WALMI apart from meeting the emerging challenges, will come out with innovative and relevant strategies towards a user friendly management style.

A problem-oriented action research programme should become an integral part of the irrigation administration of the state.

The experiences gained so far have provided information for designing programs for participatory irrigation management. Sound field research will be needed on a continuing basis. Suggested topics for further research include:

- how conditions in high rainfall and water sufficient systems affects FO efforts
- What patterns of FO will suit the topographical, ecological, cropping and social needs of plateau region of the state.
- interventions and support needed in lift irrigation and state tubewells schemes to support FO efforts
- directions for administrative restructuring at the operational level
- approaches to FO resource mobilisation
- how to strengthen WALMI to respond to HRD heavy demands.

Chapter 5

NEXT STEPS

The preceding survey would indicate that the implementation of the National Water Policy (1987) or the State Water Policy (1993) in respect of farmer organisation and management transfer of public irrigation systems or part thereof to it have not been put under implementation so far. The government, as owner-manager, has to develop a forthright and transparent legal and policy framework that facilitates management transfer. It has to put in position executive and monitoring infrastructure that guides further progress and accelerates awareness building about participatory management, assembles programme package to generate demand for user management of irrigation water and launches a programme which makes progress in this direction sustainable. The action plan proposed here does not go into any time frame since the government will have to do that in the light of their priorities.

Programme Continuity

The primary experiences forming the basis of this report has been assembled from externally funded ARPs. There was a period of discontinuity between October 1992 and June 1993 which had adverse impact on the farmers response to the activities. The situation is given in Table 8.

Donor support is now closing. The government has to step in so that the positive environment created so far is sustained. This is a national programme. Therefore, adequate priority has to be given to elements of a total package of activities that government must undertake if the policy is to become operational.

Implementation Priorities

Programme Guidelines

The government will have to work out a detailed guideline on implementing the policy of FO managed irrigation system. This report has listed a series of recommendations as also the modalities for conducting this work. This could form part of the guidelines. These guidelines should also strengthen the support services required for FO promotion especially training programmes, experience sharing between the FO executives and the system managers, as well as a status for FO functionaries in the advisory set up of the Water Resources departments.

Since the material is now available issue of an operational guideline should not be a time-consuming process.

Table 8
Impact of Discontinuity on FO Programme

| ARP Area (Date of Start) | Communication | FO Status | Decision making | Organisa- tional pace | General Members Feeling | Future |
|----------------------------------|---------------|----------------------------------|-----------------------|-----------------------------|-----------------------------------|--|
| Paliganj (June 1988) | Irregular | Survives with some leaders | Some leaders do | Slow | Still hopeful | Some leaders capable but need regular institutional linkage for a number of years |
| Jamunia (Jan. 1991) | Absent | Scattered | Absent | Missing | No hope Dependence On Govt. | Programme not conceived properly |
| Gara- Choubey (Sept. 1991) | Lacking | Yet to function properly | Some leaders do | Limited | Bewildered | Reorganisation taking place. ready for registration. |
| Asarganj (Dec. 1991) | Lacking | Yet to function properly | Some leaders do | Stand- still | Hopeful | Need regular guidance till formalised |

Promotional Agencies

The state has a large volume of public managed irrigation system. Even if the work is to progress slowly large promotional effort will be needed. Water Resources department infrastructure is the biggest available source of promotion. It should be reorganised to undertake this responsibility. This could be very ably supplemented by the work that NGOs as also farmers organisation like VASFA can do. They are able to provide development and provide new models and feasible approaches which will benefit the department in this task. The government should, therefore, work out a policy for identifying the promotional agencies, how the various agencies will interact amongst themselves and the direction they should take for the government policy to succeed. This will be an extension of the recommendation to finalise an irrigation sector, NGO promotion policy.

Water Management Policy

The issue of water management and farmers involvement for the same is a very small component in the state water policy. On the other hand, the interest and

involvement of the farmer in irrigation water at the distributary level and below is substantial. Water management suffers very serious handicaps in all its elements because of lack of cooperation from organised water users. It is time that government details the national and state water policy in respect of FO promotion and management. That kind of a document alone will meet objectives already set out.

Advisory Committees

The state government does not have at its command at present an institutional infrastructure where irrigators views on irrigation management problems is articulated. The ground reality of farmers alienation is partly a result of their reluctance to contribute to irrigation management policy which could be taken as their own. It is necessary, therefore, for the government to consider setting up of advisory committees with FOs, NGOs, experts and others involving seriously in this work at the headquarters and in chief engineers' jurisdiction to deal successfully with water management issues, to review the progress of work and handicaps to be removed and, to revise existing guidelines where appropriate.

Programme for FO Involvement

The task involved in management transfer cannot be performed without budget support for the same. Even the ARPs depended on small resources from foreign donors. In the minor irrigation sector, policy of management transfer of tubewells and LI schemes have made poor progress due to absence of FO promotion programme. Therefore, a time has come when the government should seriously consider to frame a programme and provide funds for the same. The mid-term review of the Eighth Plan provides the opportunity to do so. While considering these options, government should earmark funds under a separate budget head. A suitably funded programme deserves the highest priority.

Program Linkages

Irrigation system finances can improve only by making irrigated agriculture more remunerative. The present level of 90 percent of the area under the food crops cannot sustain capital intensive irrigation system management. The framework for diversification by reexamination of the cropping pattern in consultation with agriculture, cooperation, plantations and other relevant institutions and FO should be worked out. The arrangement should be put on a regular footing for periodic review to facilitate appropriate changes from time to time.

Administrative Reforms

The recommendation to constitute a suitable mechanism should be evolved to look into the long and short term changes required has already been made. The question of reorganisation of structures and functions of WR department as also the changes towards improving responsiveness has been brought to the fore again and again. The lurking suspicion of large scale loss of jobs need also to be dispelled. Irrigation is too big a sector and has a very large cadre of manpower and restructuring in terms of state policy is urgently called for.

Water and Land Management Institute

The necessity for HRD and motivational programme has appeared throughout the text of the report. WALMI has performed a good job. However, in its present status of strength and budgetary support, it is unequal to the task that it will be called upon to perform. It is necessary that the present status of WALMI should be reviewed. It has to be professionally equipped to undertake the task of developing training modules, it should have a core faculty not subject to transfer and there should be regional centres in the field for conducting required number of courses and overseeing field research. WALMI should be declared the nodal field research and training agency for irrigated agriculture as also for institution building in irrigation with peoples' participation.

Water Management Research

Irrigation set up in the state has some research institutions. However, field research in irrigation department has not received the priority it requires. It has been found necessary to recommend number of research items in this report. This is only the initial agenda. Technology changes are taking place very rapidly. Action research programmes to take advantage of those changes, to test user response, to evaluate benefits and, make necessary modifications to suit state agroclimatic zone requirements as well as social economic compulsions should become part of the programme and budget of the irrigation department. The research advisory committee headed by the engineer-in-chief in which all the institutions involved in research as also some eminent experts are represented will help broaden outlook on research in the water development and management sector in the state. This should be undertaken.

Implementation Infrastructure

The state government's objective has been clearly stated. It requires now to be followed up seriously. This work will require attention in more than one

department of the government. Therefore, a framework for inter-departmental communication, coordination and support should be established early. Departmental pulls within the irrigation sector are strong. Several changes are required to safeguard the interests of the sector and its beneficiaries. These will call for decisions at the highest levels and concurrency in crucial departments such as finance. Therefore, the state chief secretary will have to provide the needed leadership at the official level.

A state level steering committee, with chief secretary as chairman should be set up and charged with the following tasks:

- review and amplification of the state policy on water management, FO involvement, and resource mobilisation
- review of progress of the priorities listed and additions/alterations to the same in the light of experience and changing conditions
- approve criteria for ARPs and sanctioning projects to cover larger areas in a phased manner, including major, medium, minor flow and groundwater projects
- review of lessons from community managed irrigation systems traditionally funded by Rural Development Department and, taken up through NGO funding
- oversee pooling of available funds with the concerned departments and agencies for an integrated programme of user managed irrigation to be pursued
- take up any other matter that is suggested by the concerned departments, NGOs, and others

This committee will be at the policy level. The actual work will be done in the concerned departments of government or agencies supported by them. The committee should, therefore, authorise regional/project level committees as appropriate to supervise operations and ensure compliance with the decisions of the policy level committee.

The committees apart from departmental representatives, should also have representatives of NGOs and other eminent persons including retired engineers who are involved in this work. Gujarat pattern committee may be considered (Annex K).

The Water Resources Department should provide the secretariat for this committee and should be the nodal department for this work. There should be an exclusive unit adequate to manage this work and headed by a senior WRD engineer directly under the Secretary who should have only this work under his charge. This will imply a regular monitoring of the implementation of the state policy in all its aspects.

Environment for Administration and Legislative Changes

Adequate legal, procedural and administrative changes are necessary for structural change in irrigation management to proceed speedily and smoothly. However, premature changes may create negative impulses. Therefore, selection of a committed band of officers in administration and in development, who prepare the ground for relevant changes should be seriously considered. The government should simultaneously initiate the process of wider dialogue and discussion in the available policy and administrative fora such as the consultative committee, CADA governing bodies and others.

The user as well as local authorities response to change is mixed so far. It is not negative. A step by step approach should be expanded into the following four phases:

- **Involvement.** FO leaders should be associated with operations and maintenance of distribution systems of major systems and medium and minor irrigation projects.
- **Participation.** FO should become operational and take up joint management of operations, maintenance, conflict resolution and resource mobilisation. Steps towards financial participation in maintenance and HRD efforts towards partnership with ID should be initiated.
- **Partnership.** FO should start taking over the functions of ID which they are confident of managing and ID should withdraw progressively from that activity. This phase should just be adequate in length to ensure sustainability. Steps towards setting up FO service centres to respond to needs in technical field on payment should be initiated.
- **Self-management.** FO should assume full command over management. ID should put in place a FO service organisation for offering relevant consultancy and withdraw totally.

This situation puts heavier responsibility on the irrigation bureaucracy. They remain managers but with a change in role. They will not be mere

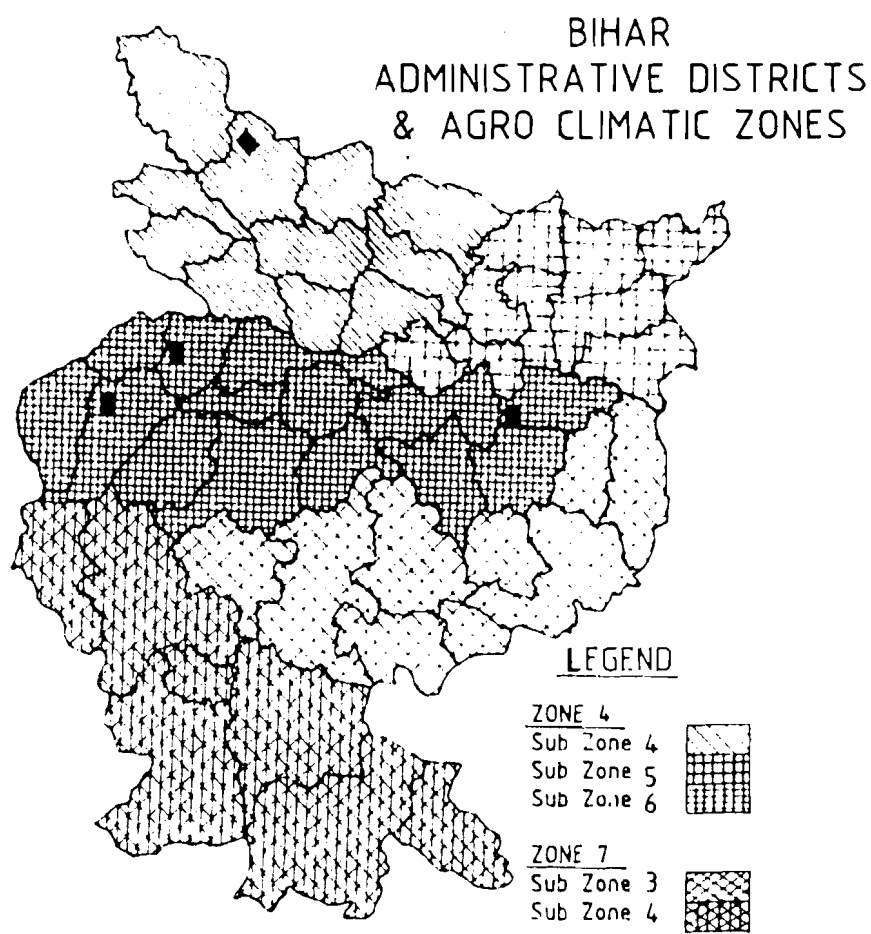
administrators but promoters and facilitators of organisational and managerial capability building amongst the users. However, they will be the greatest gainers if this change in role brings in willing co-operation of users in preventing damage to system, in protecting the infrastructure, in managing grievances through mutual discussion and accommodation and in supplementing government resources for O&M through local mobilisation. No other agency is in sight that can undertake this work.

For the present, 15 additional ARPs already proposed by WALMI and approved by the WRD should be made operational. The work in the four ARPs should continue till management transfer has taken place. Adequate earmarked funds should be made available to WALMI for this purpose. Considering the poor progress of management transfer in the MI sector, ten projects should be sanctioned to cover not only LI and tubewells but also flow schemes. WALMI should be provided the needed faculty to supervise this work. Available NGOs could also be used. This task has some urgency if discontinuity is not to harm the whole programme and implementation of the declared government policy.

ANNEXES

Agroclimatic Zones in Bihar

BEST AVAILABLE DOCUMENT



WALMI'S ARP AREA

LAND UTILISATION

(In thousand hectares) 1987-88

- A - Total geographic area - 17,330
- B - Non-Convertible Cultivable land
- 5998
- C - Convertible cultivable land - 3792
- D - Cropped area - 10,327

AREA UNDER CROPS

(In thousand hectares) 1989-90

FOOD CROPS

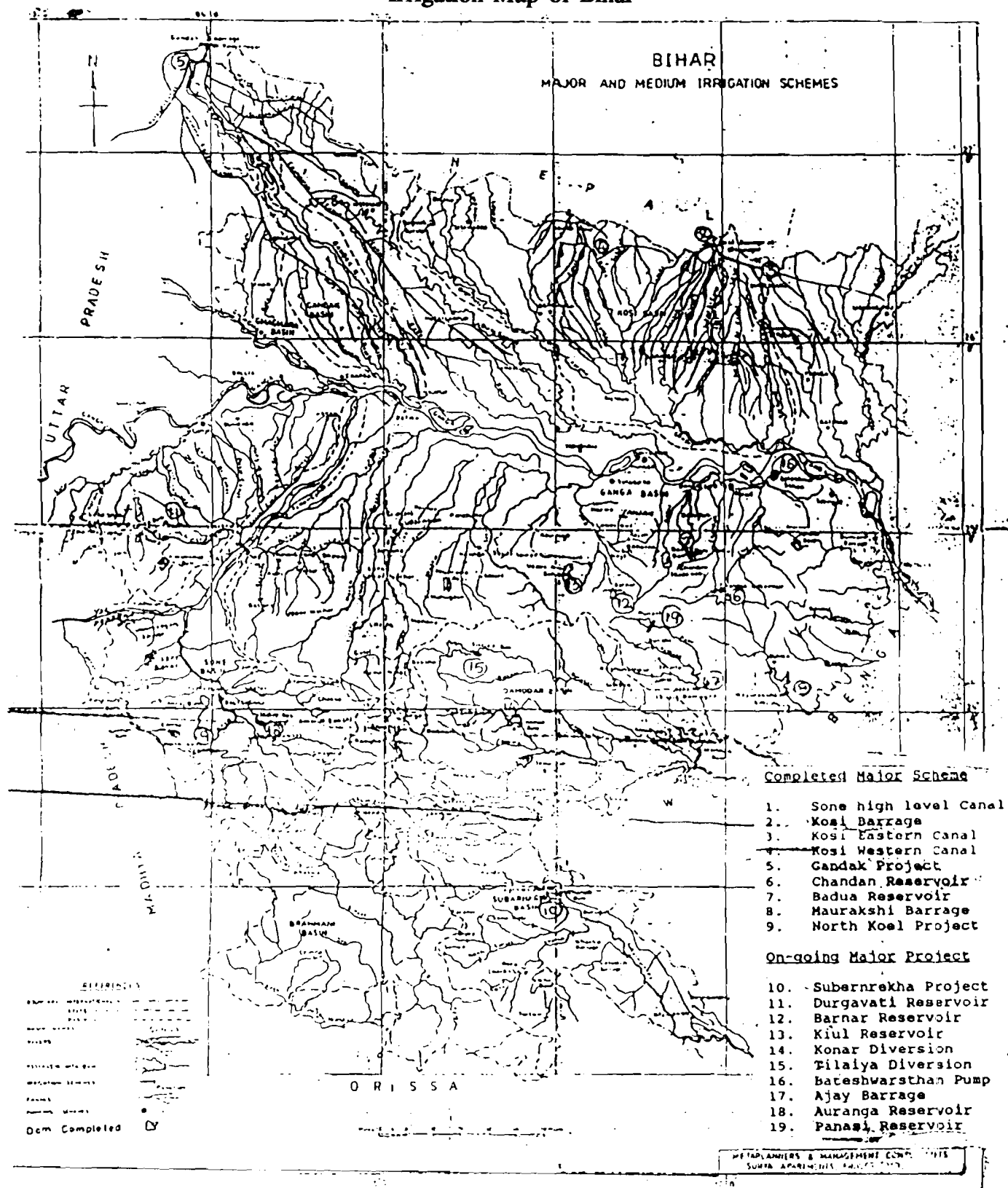
| | |
|---------|------|
| Cereals | 8059 |
| Others | 772 |

COMMERCIAL CROPS

| | |
|------------|-----|
| Sugar-cane | 125 |
| Potato | 153 |
| Jute | 118 |
| Others | 23 |

SOURCE :- Bihar Through Figures - 1991
Annual Plan, GOB - 1994-95

Irrigation Map of Bihar



Irrigation Potential

('000 ha)

Public Sector

| | |
|----------------|------|
| Major + Medium | 2750 |
| Minor | 240 |
| T.W. | 630 |

Private Sector

| | |
|------|------|
| T.W. | 2530 |
|------|------|

Total: 6150

Annex C

BIHAR: SOCIOECONOMIC INDICATORS

| 1. POPULATION | | 1981 | 1991 | |
|---------------------|--|-------|--------------------|-------------------------|
| (i) | Total | 69.9 | 86.3 | |
| (ii) | Rural | 87.53 | 86.86 | |
| (iii) | Density | 402 | 497 | |
| (iv) | Scheduled Caste | 14.51 | 14.56 | |
| (v) | Scheduled Tribe | 8.31 | 7.66 | |
| (vi) | Sex Ratio (female) per thousand male) | 946 | 911 | |
| 2. LAND STATISTICS | | | | |
| (i) | Holding Size : Percentage to total | | | |
| (a) | 2 hec. and below | 87.98 | 86.7 | |
| (b) | 2 to 10 hec. | 11.57 | 12.7 | |
| (c) | 10 hec. and above | 0.45 | 0.6 | |
| (ii) | Holdings | | | |
| (a) | Total No. of holdings | 11.76 | million 1985-86 | |
| (b) | Operational area | 10.90 | million hec. | |
| (c) | Average size of holding | 0.93 | " " | |
| (d) | Average area operated by main worker | 0.27 | hectare | |
| 3. RURAL DEPENDENCY | | 1981 | 1991 | % |
| (i) | Economically active population | 32.35 | 32.16 | |
| (ii) | Cultivators | 43.57 | 43.58 | |
| (iii) | Agriculture Labour | 35.50 | 37.13 | |
| (iv) | Primary sector Workers | 81.51 | 82.36 | |
| (v) | Manufacturing sector workforce | 3.98 | 2.26 | |
| 4. LITERACY | | | | |
| (i) | Total | 32.05 | 38.48 | |
| (ii) | Male | 46.60 | 52.49 | |
| (iii) | Female | 16.52 | 22.89 | |
| (iv) | Rural | 27.70 | 33.83 | |
| 5. GENERAL | | | | |
| a. | Growth rate of SDP | 3.33% | (1950-51 TO 85-86) | 3.40 (1950-51 to 91-92) |
| b. | Growth rate of Per capita income | 1.41% | Do | 1.57% do |
| c. | Unemployment (Daily status) | 8.81 | (1977-78) | 6.67% (1987-88) |
| d. | Poverty Ratio - Rural | | | |
| i) | Govt. released figures | 7.8% | (1977-78) | 42.67 (1987-88) |
| ii) | Expert Group of Planning Commission (1993) | 63.25 | | 52.63 |

BEST AVAILABLE DOCUMENT

FO POLICY STATEMENTS

1. Extract from summary of the Observations Given by the Hon'ble Minister Water Resources Department, Government of Bihar on the Eve of Inauguration of ISPAN Workshop on Farmer Organisation and OPC Held at WALMI, Patna on 11.12.1993.

In view of the complex situations being encountered, the farmers participation in real terms in irrigation management has become a compulsive necessity for the state. This will not only deliver the goods to the farmers in a much more efficient manner, but also help to create necessary revenue eventually for the state to carry on with new development projects for the deprived regions.

There has been widespread practice of maldistribution and wastage of water by the farmers in the canal commands, the middle and tail end farmers suffering the major brunt. If the farmers realize that they have to pay for the water they are using, they will themselves learn to be economical in use of water. This will certainly induce a sense of discipline in using water in optimum manner and prevent them from unauthorized use and wastage of water. On the other hand, they must have to be fully ensured that the networks are tuned to supply them water in desired quantity and equitable distribution of water in required times according to pre-determined watering schedule. Such a confidence will give them the necessary incentive to go for modern agriculture practices for maximizing food production. In this way, we can also improve the overall irrigation efficiency from the networks and thus by saving water create additional irrigation potential, which could be used either for increasing the irrigation intensity in the existing command or bringing additional areas into irrigation fold. We are fully conscious of the enormous cost of creating irrigation potential through new projects.

The aforesaid objectives can be achieved through farmer's organisation and evolving a mechanism for organisation and procedural changes. This workshop will deliberate these issues in depth and formulate guidelines for action plan. We are also anxious to know the results achieved through such pilot projects executed in other states where farmers organisations have been inducted.

The state government might have no hesitation to relax or enact such acts or rules which could expedite the implementation of the above concept, because it has now become difficult for it to resolve the inter-related problems in irrigation management, physical as well as financial.

2. Extract of State Water Policy Resolution No. 544 dt. 15.5.93 related to Farmer Organisation (in English Version).

4. Extension of Irrigation through Private tubewell.

For extending Irrigation facilities in the present circumstances it seems that the easiest and the fastest method is to encourage the private tube well. Hence the private tubewells dug-wells and other projects will be given first preference by State Government and the operation and maintenance of tubewells will be handed over to user's association.

12. Formation of Water Users' Association

For the construction, maintenance, and collection of water rate for channels and the sub channels in the state, the cooperation of beneficiary members will be sought by the State Government and Water User's Association will be formed for them. Attempt will be made to finally handover all the above works to Water User's Association. It will be considered to make available some part of the water rent collected to Water User's Association so that they become self-sufficient. In the initial phase, this new arrangement will be implemented in Sone, Gandak, Kosi & Chandan Badua Command area. Then, it will be slowly extended to other parts of the state in a planned manner.

13. Arrangements for training of officers and farmers

Arrangement will be made for the training of departmental officers and farmers so that the knowledge of latest water management technique can be given to them. As well as the adaptive and applied research will be strengthened to make it fully operational.

3. Summary of Government Reply to the Bihar Legislative Council Question No. IR-7 dated 22.7.1993.

The new irrigation policy of the state has been laid down under the national water policy. It has been provided therein that for the maintenance of channels and sub-channels and collection of water rates, the state government will secure the cooperation of beneficiaries to form water user organisations. Efforts will be made to ultimately transfer all the above tasks to them to make them self-sufficient. In the beginning this arrangement will be implemented in the Sone, Gandak, Kosi and Badua Commands. Thereafter, it will be expanded gradually and in a planned manner in other parts of the state. At present, the work is in a preliminary stage. Some work in this connection has been done in the Paliganj Distributary of Sone Command by WALMI but expansion and implementation

of the arrangement is yet to be done. This will be extended gradually after securing cooperation of the farmers.

On an observation that the scheme is very good, and a question about the time frame for implementation, an assurance was given that the government was considering implementation, of the scheme expeditiously and would implement it early.

Annex E

DRAFT MEMORANDA

1. Memorandum of Association

1. The name of the society shall beFarmer's Society.
2. The registered office of the society shall be situated at VillageP.S.
.....District
3. The main objects for which the society has been established are given below:
 - (a) To procure water from the parent canal and to arrange for its equitable distribution among the farmers of the command of Paliganj Distributary or assist the agency/department engaged on this work.
 - (b) To undertake maintenance of the distribution network, originating from thedistributary with the consent of the concerned agency or department and to receive payments for the same.
 - (c) To assist the concerned department in assessing and collecting water rates from the farmers whose lands are irrigated and to receive the intermediaries commission as provided under rules and fixed by the government from time to time.
 - (d) To make arrangements for improving the productivity of agriculture in the area of operation of the society.
 - (e) To generate resources for meeting the working expenses and to undertake any responsibility assigned to the society by the Government at a later stage.
 - (f) To arrange for the acquisition of land by purchase, lease, or otherwise for irrigation or allied purposes i.e. for digging out and maintaining, channels, ponds, lakes, reservoirs, bunds etc. with a view to ensuring timely and adequate water supply to the command area.
 - (g) To prepare operation plan and submit the demand of water to the concerned officer, and to execute, monitor and evaluate the same.
 - (h) To prevent wastage of water and ensure its proper utilisation.

- (i) To assist and participate in carrying out technical and physical improvements in drainage and micro-level system in the command area ofDistributary.
 - (j) To arrange for, supportive services, education and training of farmers, and inputs including agricultural extension services for both pre-irrigation and post-irrigation periods for better productivity and allied developmental activities.
4. With a view to facilitate the societies' activities and for achieving its objects the society may :
- (a) Amend the provisions in the memorandum of Association, rules and regulations and also may make rules and byelaws.
 - (b) Solicit, obtain and accept from any person, firm, company, corporation, institution local body, agency or authority of state or central Government subscriptions, donations, grants gifts etc.
5. In carrying out its objects the society may :
- (a) Pay out of the funds belonging to the society or out of any particular part of such funds, all expenses that are incidents to the formation of the society, management and administration of the society.
 - (b) Draw, make, accept, endorse and negotiate cheques, Hundies, promissory Notes or other negotiable instruments.
 - (c) For the purpose aforesaid or any of them, to sign, execute and deliver such assurances and deeds as may be necessary.
 - (d) Construct and maintain buildings, works and conveniences of all kinds suitable for any of the purposes of the society.]
 - (e) Purchase or otherwise acquire from any Government or such authorities any licences, concessions, grants, subsidies, decrees rights, powers and privileges whatsoever.
 - (f) Generally to do and execute all such other acts, matters and things as are incidental or conducive to or necessary for the attainment of the above objects or any of them.
6. Names, addresses and occupations of the first members of the Executive Committee to whom by the rules and regulations of the society the management of the affairs of the society is entrusted are as follows :

| S. No. | Name | Occupation and Address | Status in the Committee |
|-----------|------|---------------------------|----------------------------|
|-----------|------|---------------------------|----------------------------|

7. The income and property of the society howsoever derived shall be applied only for the promotion of the objects of the society as set forth in this memorandum of Association.
8. Government of Bihar being interested in the society, the society shall not be dissolved without the prior consent of the Government of Bihar.

2. Rules and Regulations

Interpretation 1. In these rules unless the context otherwise requires.

- a. "The Society" Shall meanFarmer's Society, District, Bihar.
- b. "Government" shall mean Government of Bihar.
- c. "Year" means the period from the 1st April to the 31st March.
- d. "Kharif season" means the agricultural season starting from 15th May and ending 31st October.
- e. "Rabi season" means the agricultural season starting from 1st November and ending 31st March.
- f. "Hot weather season" means the agricultural season from 1st April to 15th June.
- g. 'Act' means the society Registration Act - 1860 in force in the state of Bihar.
- h. "Rules" means the rules framed by the state Government under society Registration Act 1860 and other Acts connected with construction, operation, maintenance and management of irrigation and Agriculture Extension services of the Government of Bihar and Government of India.
- i. "Executive committee" means the operating agency of the society.

Membership :

- | | |
|--------------|--|
| First Member | 1. Signatories of the Memorandum of Association of the society shall be the First member of the society and will continue till fresh elections for the General Body of the society are held as provided under Rules and Regulations. |
|--------------|--|

Formation of
Committee and
Term of Member

2. Each village in the command will form a village irrigation committee consisting of 5 to 11 members out of which one will be the chairman and one will be the convener and rests will be the members of the committee. The formation of the village committee will be done by the villagers in a meeting called by the chairman of the outgoing village irrigation committee or any other person authorised by the executive committee of the society or by the General Body of the society. In VLC proper representation of women, weaker Section and poor farmers should be given. The farmers having land in more than one village can only be a chairman or convener of one village. The term of the committee will be for a period of 3 years and no office bearer will be elected for more than 2 consecutive term i.e. for 6 years.

Members of DLC

3. The chairman of the village irrigation committee will be a member of the DLC. All such members will form the DLC.

Term of Executive
Committee

4. Member of the DLC at its first meeting will elect the executive committee which will consists of following office bearers.

1. Chairman
2. Vice Chairman
3. Vice Chairman
4. Secretary
5. Treasurers
6. Members 6 Nos.

The term of the committee will be of 3 years and no office bearer will be elected for more than 2 consecutive terms i.e. for 6 years.

Roll of Members

5. A Roll of Member setting out there in full names and addresses of the members and their occupation shall be maintained and every person becoming a member shall required to sign the Roll of members.

6. Every member of the society shall communicate change in his address, if any, to the secretary who shall there upon enter his new address in the Roll of Members. It shall be the duty of the secretary to suitably amend the Roll of the member as and when required.

General Meeting of Members

General Body Meeting

7. An annual general meeting of the General Body of the society will be held once before the end of April every year to pass the annual report and the audited account of the society for the passed year and any other item as decided by the executive committee.

8. General body meeting will be held as and when required to transact the businesses stated in the Memorandum of Association.

9. Meeting of the Executive committee and the village irrigation committee will be held as and when required on due notice served atleast 3 days in advance by the secretary or the convener as the case may be.

Requisition for Meeting

10. Any requisition made by one tenth of the total strength of the members expressing the object of the meeting shall be forwarded to the office of the secretary/convener.

Meeting to be convened on the requisition.

11. Upon receipt of such requisition the secretary/convener shall proceed to convene the meeting of the General body/executive committee/village irrigation committee as the case may be. If the requisitioned meeting is not convened within 7 days from the date of requisition, the requisitionists may themselves convene the meeting.

- Notice of Meeting
12. At least three days before every meeting, notice there of specifying the place, the day and time of meeting and agenda of the meeting shall be given to all members of the committee/society by post or by hand delivery at their respective addresses registered with the society. Any accidental commission to give such notice or not receipt there of by any member shall not invalidate the proceedings of the meeting.

Proceedings of Meetings

13. All business that is transacted in the meeting will be recorded in a register and will be confirmed in the next meeting.
- Quorum
14. No business shall be transacted at any meeting of the G.B./Executive committee/village irrigation committee unless a quorum of not less than one third of the strength of the members in the committee is present within thirty minutes from the notified time of the meeting.
- When no quorum present
15. When no quorum is present, the meeting convened on requisition of members shall be dissolved and in any other case it shall stand adjourned to the same day in the following week at the same time and place. At such adjourned meeting no quorum shall be necessary and the members present may transact the business for which the meeting was called.
- Chairman
16. The chairman will preside at every meeting of the GB/EC/VIC. If the chairman/V.Chairman is not present, the members present may choose some one from among themselves to preside the meeting.
- Procedure of meeting and casting vote
17. Every question submitted to a meeting shall be decided by a show of hands and in case of equality of hands, the chairman shall have a casting vote in addition to the vote to which he is entitled as a member.

18. At any meeting a declaration by the chairman that a resolution has been carried or carried by a particular majority and an entry to that effect in the Minutes Book shall be conclusive evidence of the fact.
19. Every member shall have one vote and no more. All votes shall be given personally.
- Chairman guide the meeting
20. Subject as aforesaid, all meeting shall be guided in their proceedings by the chairman and his ruling in regard to all matters of procedure shall be final.
- Management**
- Management vesting of entire funds and properties
21. The funds and properties of the society and the management of the affairs of the society shall vest in the General Body of the society which shall carry on the same with the assistance of the executive committee and several village irrigation committee.
- Resignation when to take effect.
22. Resignation of the members of G.B./ Ex.c/Vill. Irrigation Committee shall be tendered to the chairman of the G.B. and shall not take effect until it has been accepted.
- Governing
23. The GB/Ex.c./VIC may function even if the total strength of the body is not full due to resignation or any other unforeseen circumstances and no act or proceeding of the GB/Ex.c/ VIC shall be in-validated by reason of the happening of any of the above events of any delay in the election/ selection of any office members.
- Substitute
24. If a chairman of the VIC is unable to attend the meeting of the G.B., he may if he thinks fit authorise in writing any other member of the VIC to attend the meeting on his behalf. The person so authorised will not however, be entitled to vote at the G.B. meeting.

Powers and Duties of the GB

- | | | |
|-------------------|------|--|
| Powers and duties | 25.1 | The Business and affairs of the society shall be carried on and managed by the G.B. as per the Memorandum of Association, Rules regulations and bye-laws framed by the G.B. from time to time. |
| | 25.2 | Without prejudice to the generality of the rule 25.1 above, the G.B. shall have the following powers. |
| | a. | To manage all the affairs and funds of the society. |
| | b. | To negotiate, enter into and execute agreements, contracts and documents on behalf of the society and vary and received such agreements, contracts and documents. |
| | c. | To advise the government on all matter relating to irrigation and agriculture of their operational area. |
| | d. | To appoint such advisory bodies or other special committees for such purpose and with such powers as the G.B. may decide and also to dissolve any of the committees and advisory body so set-up. |
| | e. | To approve the annual, revised or supplementary budget, estimates and the annual account of income and expenditure of the society. |
| | f. | To consider and adopt the Annual Report of the society. |
| | g. | To spend the funds of the society in such manner as it shall consider most beneficial for the purpose of the society. |

- h. To make bye-laws not in consistent with these Rules for more efficient disposal of the business and activities of the society.
- i. To do all such acts, deeds, matters, things as are incidental conducive to or necessary for the attainment of the objects specified in the Memorandum of Association.

Chairman

26. The chairman shall be the chief executive authority of the society and in all cases where there are no specific directions given by the G.B., secretary and other office bearers shall take directions from the chairman and carry them faithfully.

Secretary

27. The secretary shall look after the general management and affairs of the society under the supervision of the chairman and the direction of the G.B. and shall attend to all general correspondence. The secretary shall convene, whenever necessary, all the meetings of the G.B. and Ex.committee. The secretary shall do every thing necessary to give effect to the resolution passed at the G.B. meeting of the members as also to those passed by the Ex. committee. The secretary shall keep or cause to be kept all records of the society at the place to be determined by the Ex. committee.

General

Funds of the society.

28. Funds of the society shall consist of the following:
- a. Grants, assignments, contributions, advances and loans made by the Government for the furtherance of the objects of the society.
 - b. Income and any other assets acquired by the society.
 - c. Income from any other sources.

Banking accounts 29. Subject to any bye-law or directions given by the Governing Council, all moneys received by or on behalf of the society shall be paid in one or more accounts to be opened in the name of the society in any scheduled Bank and shall not be withdrawn except by cheques signed jointly by secretary and treasurer.

Accounts and Audit

Accounts 30. The society shall maintain proper accounts and other relevant records and prepare annual statement of accounts including the balance sheet in such form as may be prescribed by the Act in consultation with the Auditor of the society.

Audit 31. The accounts of the society shall be audited every year by the Auditor appointed under the Act and any expenditure incurred in connection with the audit of accounts of the society shall be payable by the society. (Auditor of the society shall have the same rights, privileges and authority in connection with audit of accounts of the society as the Accountant General or any other person appointed by him in this behalf has in connection with the audit of Government Accounts, and in particular shall have the right to demand the production of books of accounts, connected vouchers and other documents and papers and to inspect any of the office of Institute of the society).

Audit, report with
statements of
accounts to be
sent to government 32. Statement of Accounts of the society, as certified by the Auditor together with the audit report thereof shall be forwarded by the Auditor to the society (and the Government of Bihar).

The seal

33. The Governing Council may adopt a seal for being used as the seal of the society and shall provide for the safe custody thereof. The seal of the society shall not be affixed to any instrument except by the authority of resolution of the Governing Council and any two members of the Governing Council all of whom shall sign the same.

Contract

34. Except as may be otherwise provided in the bye-laws of the society, all contract and assurance of property made on behalf of the society shall be under the seal of the society and signed on behalf of the society by the secretary of the society.

Amendment of
rules and
regulation

35. These rules and regulations may from time to time be amended, altered and corrected in the general meeting of the society, provided that atleast 14 days prior notice of the proposed amendment, alterations and addition shall be given and the same shall have been passed by a majority of atleast two third of the members present at the meeting and voting.

**"Rules for Irrigation Water Management through Farmer Organisations"
(Framed under section 99 (C) of the Bengal Irrigation Act 1976 vide State
Irrigation Policy (clause-12) Issued in Resolution No. 1860-91-544, Patna,
Dated 15/05/93).**

These Rules will come in effect from

1. These Rules will be known as Rules for Irrigation Water Management by Farmer Organisations.

2. In these Rules :

- (a) 'Act' will mean the Bengal Irrigation Act 1876.
- (b) 'Form' means form in the appendix to these Rules.
- (c) 'Section' means a section of the Bengal Irrigation Act 1876.
- (d) 'Canal Officer' will mean the Officer so referred in the Act.
- (e) 'Person' will mean the person so referred in the Section 46 of the Act.
- (f) 'Superintending Canal Officer' means the Superintending Engineer, having control of irrigation of the concerned area.
- (g) 'Divisional Canal Officer' means the Executive Engineer-in-Charge of irrigation of the concerned area.
- (h) 'Subdivisional Canal Officer' means the SDO/Assistant Engineer-in-Charge of irrigation of the concerned area.
- (i) 'Sectional Canal Officer' means the Engineer Officer-in-Charge of any section operating irrigation in the concerned area.
- (j) 'DLC' will mean Distributary Level Farmer's Committee.
- (k) 'VLC' will mean Village Level Farmer's Committee.
- (l) 'MOU' will mean Memorandum of Understanding signed by the Divisional Canal Officer and chairman/secretary of the Farmer's organisation.
- (m) 'FO' will mean Farmers Organisation.
- (n) 'WRD' will mean Water Resources Department.

Application:

3. (i) Every application for supply of water under section 74(2) shall be submitted to the Divisional Canal Officer. The tenure of which will be valid for seven/ten years.
- (ii) Application for supply of water will be submitted in the form No. 1 placed in the appendix of these Rules.
- (iii) Application shall be submitted not later than 31st March or on such later date as may be sanctioned by the Divisional Canal Officer.
- (iv) The application on Form I shall be signed by secretary of DLC duly registered under societies registration Act 1860 by I.G. registration of Government of Bihar and presidents of CLC of such village having irrigable area not less than 60% of the total command area in the village.

Lease :

4. A permit for lease shall be issued in the Form 2- vide appendix by the Divisional Canal Officer.
5. The accepted application signed by the Secretary, DLC, Presidents of villages having total irrigable area not less than 60% of the irrigated area of the village together with the permit signed by the authorised Canal Officer and MOA, shall constitute the lease document, and every lease shall be subject to conditions given in MOU, as per Form III vide appendix.

Demand and Collections : (For Asarganj action as per Court Order)

6. The Canal Officer shall authorise the DLC under provisions of section 82 and 83 of the Act to collect revenue on its behalf from the persons utilising the water supplied through the DLC
7. There is no need for the Divisional Canal Officer to sign the register of the DLC and VLC about entries connected with assessment and revenue collection but inspection of records and verification of irrigated area can be done by him occasionally.
8. In such cases where the Irrigation Register shows supply of water to fields, but the crop later on failed for want of water, DLC may present an application for remission of water rate to that extent. Such application shall

be delivered personally or by registered post to the Divisional Canal Officer, before the crop is harvested. The Divisional Canal Officer will take decision after verification as per rule.

9. On receipt of an application the authorised canal officer shall after such enquiries as he thinks fit pass orders there on and shall deliver or send by post a copy of such order to the Secretary of DLC.
10. (i) An appeal if needed be made against any order passed by the canal officer to the Superintending Engineer of the canal area.

(ii) Every such appeal shall be accompanied by a copy of the order of the Divisional Canal Officer appealed against.

(iii) The Superintending Engineer after such enquiries as he may think fit, pass orders on such appeal and may by an order in writing direct that the collection of the water rates shall be suspended until such appeal is decided.
11. In case of crop failure due to drought, flood or any other natural calamity the remission of water rate will be as per declared policy of government
12. A register will be kept by every CLC in which detail description of all irrigable area of every farmers along with the description of no. of irrigation done in every plot, The amount of water rate for irrigated area and the receipt no. of payment of water-rate will also be in the register.
13. The VLC will verify every case of alteration and remission and will send it to the DLC the decision of which shall be final. This alteration will be valid for irrigation purpose only and for other cases mutation done by court will be valid. There will be a separate register for these matters.
14. For assessment and collection of water rate the FO will need training. For this the Revenue Section of WRD will train the FO and if demand they will give on job training free of cost in the field for two years in the beginning.
15. The amount of water-rate will be fixed on the reported average of last three Kharif and Rabi Seasons. A portion of which will be remitted by DLC to government as per MOU and the balance amount will be utilised by DLC for operation, maintenance and development of Canal. After every five years the government will review this reported average irrigated area and will take decision regarding this.

16. The amount meant for government if not remitted by DLC in time in that case water supply from next season will be stopped and action will be taken for realisation of the amount under provision of rules 84 and 85 or Bihar and Orissa Public Demand Recovery Act.
17. The G.O. will have the right to take soil from the Chat land for maintenance but the power for lease and collection of revenue will vest with the government

3. Memorandum of Understanding

For canal operation and maintenance by farmers (under clause 5 of Rules for Irrigation Water Management through Farmers Organisations)

This Memorandum of Understanding, between Executive Engineer (who will represent the Governor of Bihar) and Society (who will represent the farmers of the concerned area) is executed to-day, the day of the month of of year

According to this Memorandum of Understanding the work of canal operation, water distribution, maintenance of distribution network above the government outlets in the command area of all direct outlets from the distributary, the sub-distributaries, minors and water courses taking off from the Distributary (which takes off from km of canal and water rate assessment and collection, is allotted to society for a period of ten years, subject to the condition that the ownership of structures the entire distribution network, which will include all irrigation channels, acquired land and trees etc. will remain with the Government of Bihar.

Both parties amongst whom (stated above) this MOU is being executed have agreed to execute the above mentioned works under the following conditions. Any change in these conditions will be effective only after mutual consent of the two parties mentioned above..

Main Objectives

1. The main objective of this MOU is to affect maximum utilisation of the available water by effective participation of farmers in irrigation water-management.
2. By organising land-owners to work in an organisation it is essential that atleast 60% of the farmers of the area are members of the society. Government desires that 100% of the land owners of the concerned command area will join the society as member. It will be the duty of the society to frame suitable rules for increasing its membership.
3. The other objective of this MOU is that the farmers community, may be able to effect increase in agricultural production on minimum cost and make profit by learning and implementing the agricultural and water management technology so that agriculture may become a profit-earning industry. This will include, minimising use of irrigation water, and using best varieties of seeds, manures, insecticides etc.

4. This MOU is being executed under the state irrigation policy adopted by the Government of Bihar to encourage participation of water-user association, so that many water-user associations may come up for providing participation in irrigation water management.

Operation

1. The DLC after obtaining such 'Patta' for a specified period to start with, will arrange properly all its activities for smooth functioning.
2. The Water Resources Department will ensure supply of adequate water as per accepted rotation of the system in time at the Head Regulator of the Distributary the turn over point, where from the management of DLC will start. The supply should not be less than last three year's average supply, and should be attempted to be the average supply with fluctuation of 10%, on either side. The Measurement of water will be jointly recorded and signed daily by a person authorised by both parties.
3. DLC will decide most suitable, rational, and effective canal operation plan for distributing water in various sections of the command area of the distributary, in consultation with the VLC.
4. DLC will decide most suitable, rational, and effective canal operation plan for distributing water in various sections of the command area of the distributary, in consultation with the VLC.
5. DLC and VLC will decide most desirable cropping pattern and scheduling of the agricultural operation (if needed in consultation with District or Block AO). In such a manner that peak demand of water is scientifically scattered with a view to optimising the irrigation benefits with existing quantum of water supply.
6. DLC must arrange proper supervision to ensure timeliness and adequacy of internal distribution of water as per canal operation plan decided vide 3 above. Monitoring of this should be done regularly in fortnightly monthly meetings.
7. (a) A policy decision was made by the State Government in a meeting headed by Development Commissioner on 08/11/1988 to enable on priority basis voluntary consolidation of land holdings in a manner to have irrigation field channels and chak roads on one side and field drain on another end of consolidated plot of each farmer. CADA was given the responsibility to prepare contour map on village map align and construct field channel chak roads, field drain on this basis and help in consolidation (voluntary) of land in between these.

- (b) DLC will take initiative in this direction and motivate farmers to enable respective CADA to initiate action in their command.
 - (c) Specially for rabi irrigation and economy of water use, field-channels are most desirable which should be got scientifically aligned and constructed with the help of CADA.
 - (d) DLC and VLC would take responsibility of maintenance, repair and proper functioning of those field-channels, chak roads and field drains also.
 - (e) Voluntary consolidation of land will necessitate improvement of inferior land by levelling, improved drainage, agronomist assistance, soil culture etc. to minimise resistance to this from any corner. CADA, Agriculture Department, Agricultural Research Stations, and other extension services must help in these respect.
8. DLC will try to update the system by updating the outlets number, locations realigning field channels as mentioned above, in which full technical and financial help free of cost will be made available to them at their request by the line agencies - both WRD and CADA.
 9. DLC will ensure proper rationing of water in case there is unexpected spell of drought to save crop of entire command or as large as possible area without any discrimination for maximising production even in such condition. In year, supply will be proportionately reduced as per government policy DLC must however, be informed of this, in advance.
- Similarly even in case of excessive rain proper escaping will be managed without causing damage to conveyance system and crop.
- Law and order authorities will come to help, as if the management is directly under government, if such request are made by DLC.
10. Social forestry including extensive arboriculture on canal land will be done, and scope of subsidiary occupation for landless and marginal farmers will be explored by DLC Government will help in these activities.
 11. Communication system-telephone wireless in case of long stretches of the system at suitable places should be provided as per availability initially by the Line Agency and maintained and operated properly by DLC.

12. DLC will maintain record of area irrigated. After every irrigation of field signature of the farmer or his representative should be taken on register kept for this by VLC. This should form basis for report, as well as assessment and collection of water rates. In this register for each plot area, name of owner, date of irrigation and signature of representative should be written.
13. The DLC will keep contact with the District Council constituted under Bihar Panchayat Rajya Act, 1993 to fulfil the requirement under section 71 (iii) of the Bihar Panchayat Rajya Act 1913 (Bihar Act 19, 1993), whose objective is exactly the same which is being tried to be achieved by this MOU.

Special Incentive:

In order to achieve the objectives of the optimum and judicious use of available water most effectively, preventing unauthorised use, and bringing maximum area under irrigation following incentives would be given to the DLC if demanded.

- (a) If Government of India/World Bank offers grant for encouraging the activities being managed by the DLC. These grants and facilities would be extended to the DLC.
- (b) Services of one Junior Engineer would be spared to the DLC if demanded for water management in the jurisdiction of the DLC for a period to be mutually agreed. The JE so deputed will work under the control of the DLC. His salary and allowances will be borne by the Government.

Maintenance

1. DLC and JE/SDO incharge of the system will jointly make a survey of the system, its each structure, and prepare a note on the existing condition of the system, which shall form a part of the MOU.
2. The DLC after taking over the system, properly operate and maintain the same with resource at their command. They should operate in such a manner that the system does not breach and deteriorates, rather it is gradually improved by them to their full satisfaction, and becomes capable of reaching water to the remotest corner also.
3. After every season the system, including its banks, structures, gates, hoists etc. should be repaired by DLC with intention to bring them to their full utility.

4. The banks of canal and side cutting lands (chat) should be kept free of encroachments and maintained in the manner provided in the Bengal Irrigation Act, 1976.
5. A detail list of present encroachments will be prepared jointly by the WRD and the DLC and the State Government will ensure their removal.
6. Maintenance of service road will be the responsibility of the DLC and the Government Officers will have right to use it free of cost at all times.
7. The Water Resources Dept. and DLC should make survey of trees and other assets jointly and a proper inventory signed by both parties should be maintained and form part of MOU. The responsibility of security and maintenance of trees will be of DLC.
8. For the maintenance of the canal system no fisheries lease or fish catching operation should be resorted to by any one.
9. No permanent obstruction or construction in any of the system will be allowed. Any existing obstruction at present should be got removed by the WRD as their continuance will restrict water supply lower down and will negate the very purpose of improvement.

Assessment & Collection

1. Under the provisions of section 5 of the Bengal Irrigation Act, 1876 the State Government will authorise the Chairman/Secretary of the said Farmers Organisation to recover water-rates of the area which is being irrigated by the system since long under sections 82, 83 & 84 of the Act.
2. The DLC will be authorised by the Government to retain 70% of the revenue collected from the fixed area for the purpose of operation, maintenance improvement and service charges connected with operation and maintenance of the canal system handed over to them in fulfilling the objective and functions mentioned in the MOU and pay 30% of the same to the WRD, as their share for the O & M of parent canal.
3. The DLC will keep record of each watering in the individual plots, and prepare bill of water rates at the rates approved by the Government and will let the farmers know the demand soon after the irrigation season.
4. The beneficiary farmers must pay the water rates within three months of the date of demand, and if any one fails to pay the same the DLC will have

the authority to stop giving water to the concerned farmer in next season, apart from taking action for realisation as government Demand on the authority provided in the Act, section 85 of the Bengal Irrigation Act 1876 and B and O Public Demand Recovery Act 1914.

Dispute & their Resolution

1. There may arise dispute between
 - (a) DLC and WRD
 - (b) DLC and VLC themselves.
 - (c) Any farmer and VLC or DLC themselves.
 - (d) One farmer and the other farmer regarding distribution of water.
2. Any dispute between DLC and WRD will be resolved by a committee of arbitrators, of which one member will be appointed by the WRD., one by the Farmers Organisation and the third will be the Presiding Officer, who will be an agreed candidate by both parties. The award of the committee will be final.
3. Dispute between DLC and VLC if any should be resolved first by mutual discussion between both and if not resolved then it will be decided in meeting of the general body. If it is very grave MOA 's' provision for superseding the VLC and fresh election may be adopted as last recourse.
4. In case of grave charges by individual farmers against the office bearers of the DLC or VLC respective general body should decide the issue.
5. In case of violation of canal operation plan fixed by CLC and/or DLC by any farmer or a group of farmers for their personal gain at the cost of others or by way of stopping diverting water flow by wasting water the VLC or its Secretary/Chairman will
 - (1) First of all, intervene and warn the errants and ensure proper adoption of the accepted canal operation plan.
 - (2) If the errants still continue to disobey
 - (a) the water supply to their fields should be stopped and provisions of section 76 of the Act will be applied by the VLC/DLC.

- (b) Penal irrigation rates applicable for Unauthorised Irrigation will be levied by the Committee on the field so benefitted.
- (c) Penal provisions by officers under Section 93 of the Act will be imposed on the recommendation of the VLC/DLC.

Executive Engineer
Concerned Division

Chairman/Secretary
DLC

FORM - 1

[Please see Rule 3(2)]
Application for Long Lease

Village Pargana Distributary

1. I as ofagreeing to abide by the provisions of Bengal Irrigation Act 1876 and rules framed under section 99 (c) of the said Act hereby request for supply of water of irrigable holdings of the sector of land comprising of villages mentioned below for the purpose of irrigation. From 1st June to 15th March for ten years from the above mentioned distributary.
2. I further agree that part of water-rate chargeable for Kharif season @ Rs. per Ha. and for Rabbi season @ Rs. per Ha. will be deposited by my organisation in two instalments one before the 30th June for Rabbi and before 31st March for Kharif, after collecting the same from the individual farmers.
3. Any increase in this rate of irrigation if ordered by the Government during the 10 years period of the lease, will be acceptable to the society.
4. 30% of the water rate collected by the society as per clause 2 above will be deposited by the society with the Govt. and 70% will be utilised by the society in discharging the responsibilities given by the Government to the society as per M.O.U. for which proper account will be kept which will be always available for inspection and audit by the Govt. and in case the amount is not remitted to the Govt. in time the water supply will be stopped from the next season.
5. On expiry of my term of office the elected of the organisation in my place will be bound by these conditions.

Encl : Note : (For Asarganj the water-rate will be as per Court Order.)

1. List of villages and area with signature of Presidents of VLC

Signature of Secretary/Chairman
Farmer's Organisation
(Seal of Office)

2. Copy of Registration deed of DLC
3. Proof of election of Secretary/Chairman of DLC

Annexure -1

| Name of Village | Area of Land to be irrigated | Total irrigated Area | Signature of President of VLC | Signature of Witness |
|-----------------|------------------------------|----------------------|-------------------------------|----------------------|
|-----------------|------------------------------|----------------------|-------------------------------|----------------------|

FORM - 2

(Please see Rule 4)

Permit for Long Lease

Permit No.

Application No.Date

Name of Farmer Organisation:

Name of Pargana:

Area of Irrigable Land:

Name of Distributary:

Location of Head Regulator:

Full discharge at HR

Period of Irrigation: 1st June to 15th March

Rate of Water: Kharif before 31st March Rabbi before 30th June.

Name of Chairman/Secretary of FO:

Period of Permit:

No. of Distributary in records:

This permit is issued under the provisions of Bengal Irrigation Act 1876 and rules framed u/s 99 (c) of the said Act. The water-rate will have to be paid every year even if there is no demand of water.

Annex F

PROFILE OF ARP AREAS

| PARTICULARS | PALIGANJ DISTRIBUTARY | GARA CHOUBEY BRANCH CANAL | JAMUNIA BRANCH CANAL | ASARGANJ DISTRIBUTARY |
|--|---|--|---|---|
| Name of the project in which | Eastern Sone Canal research area is situated | Western Sone Canal System | Gandak Project System | Badua Reservoir Project |
| District & Block | Paliganj and Bikram (Patna) | Ram garh Mohma & Kudra (Rohtas) | Harsidhi (West Champaran) | Tarapur (Mongher) |
| Name of the Channel and head | 1. Paliganj Distributary discharge in cusecs 2. Chandaus Sub- Distributary (25) 3. Bharatpura Sub- Distributary (25) | 1. Dungri Disty. (180) 2. Barhupur Distributary (20 cusecs) | 1. Dhawahi sub- (19 cusecs) 2. Harsidhi Minor (17) | Asarganj Disty. distributary (63)(120) |
| Total length of canal network (km) <u>2.8</u> | 26.0+6.8+5.1+37.9 Extra prop 40.7 | 10+8 = 18 (Channel) | 4.27+2.59=6.86 | 11.77 (Adras |
| Month and year of | June 1988 start of ARP | <u>Sept.1991</u> Sept.1993 | January 1991 September 1993 | December 1991 |
| Cross Command Area (CCA) | 14,867 Ha. | 2,277 Ha. | 6,980 Ha. | 5,061 Ha. |
| Culturable Command Area (CCA) | 12,197 Ha. | 1,265+753 =2,018 Ha. | 3,179 Ha. (D) 918 Ha. (H) | 3825 Ha. |
| Average Rainfall in the study area | 100 cm. | 103.1 cm | 121.4 cm | 125 cm |
| Name of Agro-climateological zones | zone-6 | zone-6 | zone-4 | zone-6 |

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| | | | | |
|--|---------------|---------------|--------------|---------------|
| Main Crops | | | | |
| a. Kharif (June to October) | Paddy | Paddy | Paddy | Paddy |
| b. Rabi (October to March) | Wheat, Pulses | Wheat, Pulses | Wheat, Moong | Wheat, Pulses |
| c. Hot Weather (March to June) | Nil | Nil | Nil | Nil |
| Average yield | | | | |
| (i) Paddy | 1729 kg/Ha. | 2200 Kg/Ha. | 2300 Kg/Ha. | 2100 kg/Ha. |
| (ii) Wheat | 1835 kg/Ha. | 2000 kg/Ha. | 200 kg/Ha. | 2100 kg/Ha. |
| (iii) Pulse | 807 kg/Ha. | 200 kg/Ha. | NA | NA |
| No. of villages under the study area | 76 | 49 | 19 | 32 |
| No. of Household in the study area (1991) | 22166 | 1554 | 7710 | 4221 |
| Percentage of different category of farmers: | | | | |
| (i) Big | 16.5% | 10.0% | 8.6% | N.A. |
| (ii) Medium | 17.4% | 40.0% | 20.0% | N.A. |
| (iii) Small | 38.6% | 35.0% | 35.7% | N.A. |
| (iv) Landless | 27.5% | 15.0% | 35.7% | N.A. |
| Farmers organisation created: | | | | |
| (i) at branch level | Nil | 1 | Nil | Nil |
| (ii) at distributary level | 1 | 2 | 1 | 1 |
| (iii) at village level | 52 | 13 | 31 | |

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Annex G

COMMAND AREA DEVELOPMENT AUTHORITY FO IN IRRIGATION MANAGEMENT

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| Item | Study Area - Gandak | | | | | Sone Tarwan Minor |
|----------------------|---|--|--|---|---|---|
| | Sophwa Minor | Nawaka Tola, Minor | Ram Nagar Bankat Minor | Jian Minor | Marwan Minor | |
| District | West Champaran | East Champaran | West Champaran | Muzaffarpur | Muzaffarpur | Patna |
| Initiation Year | 1975-1976 | 1977-1978 | 1985-1986 | 1986-1987 | 1989-1990 | 1976-77 |
| CCA (Ha) | 75.3 | 88.3 | 223.71 | 233.6 | 300 | 51.4 |
| Beneficiaries | 210 | NA | 630 | 233 | N.A. | 77 (All castes) |
| Prevailing Condition | - Farmers not aware of OFD works - Adequate water available but last yield. | - Head reach crops damaged due to over irrigation but tail reach suffer. | - Head reach crops damaged due to over irrigation but tail reach suffer. - Inter village group rivalry | - Water availability uncertain. - Distribution poor. - Cropping intensity low (108%) | - Water availability uncertain - Distribution poor. - Cropping intensity low (108%) | Farmers not aware the importance of OFD works. Water scarcity was prevailing due to tailend location. |
| Objectives | To apprise farmers of benefits of full OFD. | To apprise farmers of benefits of proper water management | Water management by involving farmers | Increasing cropping intensity and productivity by proper water management involving farmers. | Replication of JIAN | Land consolidation & OFD works. |
| Efforts : | | | | | | |
| (i) Team formation | - Engg. + Agr. + Co-op - Direct interaction with farmers - Farmers suspicious, No cooperation, hostile - Internal meeting strategy formulation - Identification of some progressive farmers, appraisal of programme. - Progressive farmers convinced, they influenced more farmers, better platform established. | - Engg. + Agr. + Co-op (a) Interaction with selected farmers (b) Cooperation assured - farmers hopeful of better yield. - Ready to spare land for physical systems - Ready to operate channels and follow roster of Warabandi | - Engg. + Agr. + Co-op (a) Interaction with selected farmers. (b) Cooperation assured, - farmers hopeful of better yield. - Ready to spare land for physical systems - Ready to operate channels and follow roster of Warabandi | - Engg. + Agr. + Co-op (a) Interaction with selected farmers. (b) Cooperation assured - farmers hopeful of better yield. - Ready to spare land for physical systems - Ready to operate channels and follow roster of Warabandi | - Engg. + Agr. + Co-op (a) Interaction with selected farmers. (b) Cooperation assured - farmers hopeful of better yield. - Ready to spare land for physical systems - Ready to operate channels and follow roster of Warabandi | Engg. + Agr. + Co-op Attracted by the developments in Jian Minor (adjoining area), the farmers requested to take needful action in their area. The Joint Register convened their meetings and formed the FO and registered it (1989) |

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(ii) Organising Process-

- General meeting.

- Farmers responded, hopeful of better agriculture returns, ready to follow Team's directions agreed for voluntary consolidation.

(a) Tried to formulate FO
(b) Farmers suspicious, not agreed.

- Formulated co-operative Society
(Registered 25.12.1978)

(a) Tried to formulate FO for operation, maintenance and take over of the Minor
(b) Farmers hesitant
(a) No physical improvement till FO formulated
(b) Farmers of different group agreed.
- Formulated FO
(Registered 9.12.86)

(a) Tried to formulate FO for operation, maintenance and take over of the minor
(b) Farmers hesitant
(a) No physical improvement till FO formulated,
(b) Farmers of different groups agreed
- Formulated FO
(Registered 16.5.88)

N.A.

Formation of Chakbandi Samiti consisting 7 persons representing each caste, group and sector from the beneficiaries..

Evaluation of ruts for chakbandi based on social justice and on the line of the interest of the farmers

System improvement

- Voluntary consolidation work done,
- FCs, FDs, Farm-roads constructed

- FCs constructed by some progressive farmer
- Roster of Warabandi formulated.

- Minor repaired
- FCs constructed by CADA
- Laterals by FO
- Roster of Warabandi formulated

- Minor repaired
- FCs constructed by CADA
- Laterals by FO
- Roster of Warabandi formulated

Line Agency did not cooperate due to apprehension of losing their authority.

Voluntary consolidation work done.

OFD work done.

Subsequent development

- Inputs made available on subsidised rates, proper water management productivity raised by 300%
- Subsequently less attention by CADA
- Secretary became dishonest,
- System not cared properly
- Water supply erratic, systems damaged badly, productivity fell down to pre-project period

- Water distribution proper
- Productivity raised,
- Less subsequent attention by CADA, water supply erratic, system collapsed
- Farmers made society for inputs management
- Head reachers benefitted general farmers suffer

- Water distribution proper
- Productivity raised, by 250%
- Water supply improper
- Society members conscious
- System alive but at slow rate.

- Proper distribution
- Productivity raised cropping intensity raised to 170%
- CADA active
- Secretary slack
- Farmers active but cared least for free inputs but care most if some investment made by them
- Secretary made active by farmers
- Society alive
- Farmers happy.

Society died.

- Augmentation of water supply through wind pump initiated.
- SCADA directed for availability of inputs for initial period. Then they lost further interest.

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| | | | | | | |
|-----------------|---|--|--|---|---|---|
| Experiences | <ul style="list-style-type: none"> - Society rises with sincere leader. - Once faith in Society shattered, it is very arduous to revive it. | <ul style="list-style-type: none"> - Farmers are not ready to bear any loss but they are eager to avail direct benefits, motivational process has to be continuous. | <ul style="list-style-type: none"> - Farmers are capable of sharing the responsibilities provided they get water properly, but they are not ready yet to make regular investment in repair or O&M in general. | <ul style="list-style-type: none"> - Needy farmers respond quickly and take risk if convinced of benefits but they need quick and proper guidance. | <ul style="list-style-type: none"> - Farmers suffering from scarcity and uncertain water delivery are keen for action and prospects have to be explained to them and motivational effort mounted. <p>Without a clear policy, the programme cannot succeed.</p> | <ul style="list-style-type: none"> - Society rises with committed Govt. officer and honest leader among farmer. If faith in leadership is doubtful then success becomes doubtful. |
| Lessons Learned | The line agencies as well as the farmers should be vigilant. Renewal or replacement of leadership has to be attended to. | Line agencies should not act in hurry. FO should be allowed time for capability building. | If the policies are clear the farmers will cooperate. | Line agencies should be positive, responsive and active. | There should be a clear policy and modalities of its implementation. | <ol style="list-style-type: none"> 1. The line agency as well as farmers should be vigilant to select suitable persons to conduct works. 2. The scheme could not be replicated in neighbouring villages due to some incomplete work regarding land levelling for which a provision was kept in the budget of SCADA. 3. Doubt of some farmers that the Mukhia in collaboration with SCADA might have benefitted at the cost of members. So SCADA should be transparent in dealing with public work. |

Case study prepared by Er. I.B. Prasad, WALMI, Patna.

Abbreviations: Engg - ID, CADA.

Agr. - Agriculture

Coop.- Cooperative Dept.

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Annex H

VAISHALI AREA SMALL FARMERS ASSOCIATION (VASFA) A CASE STUDY OF RURAL ORGANISATION-BUILDING

Vaishali falls in the alluvial plain of North Bihar. It was the seat of perhaps the earliest republic in India. A cultural revival programme was launched here by Late Sri J.C.Mathur, who started his career as a Sub-divisional Magistrate in early 1940s. This provided a boost to interaction with the masses. However, agriculture in the area was waiting for a new initiative. It was thought appropriate to take up this initiative in the voluntary sector. Late Mr. J.C. Mathur once again provided the leadership to the FFHC team that was operating the national programme. The area is floating on water. However, the texture of the soil made osmosis process in the rootlets of the standing crops ineffective. Therefore, even the seemingly moist soil needed frequent irrigation. The project had, therefore, to accept irrigation as the key objective for bringing together farmers. Tubewell irrigation was the appropriate instrument.

Sponsoring Organisation

Freedom From Hunger Campaign (FFHC) India, as the agency for routing external NGO assistance for agriculture was the lead organisation. Indo-Norwegian Solidarity Fund agreed to provide the financial resources for VASFA programme. The group tubewell programme was funded by loan assistance from Central Bank of India on usual terms. The Union and the State Departments of Agriculture offered technical and extension support. FFHC was converted into a registered society -Peoples Action For Development India (PADI) - and it continued its support and involvement with VASFA. This organisation merged with CART - Council for Advancement of Rural Technology - and a joint body is now called CAPART. The involvement continues.

15 additional Association of farmers on the pattern of VASFA were organised in the decade of seventies itself. The initial development assistance for this enterprise was provided by Danish International Development Agency (DANIDA). VASFA and specially its honourary consultant Mr. K.D. Dewan headed the organising effort.

Project Details

There were two phases in completing the total programme. FFHC initiated Mr. K.D.Dewan into the project area of VASFA in 1969. The Association was

registered in 1971. It covered 14 villages in two contiguous Blocks of Vaishali and Saraiya. There was a total membership of 700 landowners who were to join 36 group tubewells in all. The total area to be covered was 328 hectare. These tubewells were completed by 1975.

This work generated enough interest. Therefore, from the funds available from DANIDA, 15 additional Associations were formed on the pattern of VASFA in the districts of Vaishali, Muzaffarpur, East Champaran and West Champaran. These Associations were spread in 219 villages with a membership of 9300 land owning families. A total of 290 group tubewells were completed by the project by 1980.

The donor assistance was of the order of IR 9 million and Bank Credit of IR 20 million. The donor fund was used to provide margin money for bank loan. A part of the money was also kept in fixed deposit so that its interest would provide stable income for the organisation. The farmers undertook to return the entire cost of tubewell in prescribed instalments. This has been achieved. The following table of VASFA operations from April 1990 to March 1993 explains the financial status of the society.

| | <u>Amount</u> |
|--|---------------|
| I. Expenditure, largely establishment | 204,397.28 |
| II Income (Source wise) Total | 179,656.50 |
| a. Service charges including donations: | 63,559.33 |
| b. Membership fee & miscellaneous | 37,081.97 |
| c. Bank interests on margin money & other funds. | 79,015.20 |
| III. Net deficit (3 years) | 24,740.78 |
| IV. One year deficit | 8,246.93 |

The poor financial conditions of farmers in the area was realised and a minimum provision for stable source of income was made. The farmers have been able to generate higher income. They can easily meet the present deficit and are planning to do so.

Organising Process

The decision to locate the project in Vashali area and establish a farmers organisation was taken by FFHC India. Since the objective was to promote modern agriculture a volunteer was identified from Haryana. This volunteer had a long experience with rural organisation and was prepared to work as

almost a honorary Catalyst. All operational decisions regarding the project was taken by FFHC in consultation with him.

The volunteer carried out a benchmark techno economic survey in co-operation with local leaders. The state government functionaries provided him the needed assistance. It was a problem-oriented survey. The land was fertile but suffered from technical deficiency. The soil structure was such that frequent watering was needed to reach water to the rootlets of the crops grown. That security was possible through tubewell irrigation, since ground water was in abundance. However, land holdings were very small, mostly less than one hectare and that too fragmented at several places. Group approach was the only viable approach. The farmers were not accustomed to organising for water development and use. They were a highly divided lot, the preceding cultural activities notwithstanding. The task of organisation building was daunting. Simultaneous action was needed on several fronts.

The important task was to create an awareness about the problems and the potentials among the local people. This could be undertaken by identifying willing local leaders. The fourteen villages selection followed the availability of willing leaders. Once achieved, group meetings and mass meetings were organised to motivate farmers for group tubewells and improved agriculture from dependable water supply. The result was the programme in the 14 villages.

The mobilisation of bank finances was also not easy. Group financing to small and marginal farmers was full of risk. The process of protracted motivation and negotiation followed. The Bank agreed but put across their condition. They would deal with a duly registered society, that society will have to stand guarantee for recovery of loans, apart from the collaterals offered by the Group. VASFA was the promoter. It agreed.

The legal instruments arranged was two sets of agreement. The first was an agreement between owner of the land on which tubewell was to be installed, the co-sharers in that tubewell and VASFA. The terms of access to tubewell was secured. The second agreement was between the Bank, the cosharers of the group tubewell and the VASFA. The VASFA was registered under the Societies Registration Act (1860) and assumed full legal status for guarantees that were needed.

The Association evolved an innovative organisation pattern. In actual practice the method of election and composition of executive committees was designed to permit autonomous functioning and democratic processes. Except for the lowest tier the other two tiers had a mix of direct election of the chairman to head the executive committee composed of Dalpati from the tubewells and

Chairman of the Zonal Committees. The Chairman of VASFA had one year term and the post is to rotate between the three zones in which all the 14 villages have been divided. The following chart will explain:

Organisational Chart of VASFA

| | Unit | Mandate | Status |
|----|---------------------------------|---|---|
| 1. | a. Chairman VASFA | Members | Direct election |
| | b. Executive Committee | Zonal Committee Chairmen Dalpati of Tubewell. General Secretary nominee of financing Bank. | Powers of the Registered Society. |
| 2. | a. Chairman Zonal Committee. | Members | Direct election. |
| | b. Executive Committee | Dalpatis | Informal |
| 3. | a. Dalpati | Members | Informal Tubewell |
| | b. Vyasthapak | Members | Committee |
| | c. Operator | Nominated by above two | |
| 4. | Members | Landowners & landless. | Electorate. |

The process of organising was started with VASFA. The identification of villages and locations had taken place during the awareness phase. However, VASFA organised the tubewell committee and the zonal committees. A higher level unit was first organised. It took up the election and constitution of the two lower units. The negotiation with the Bank and other funding agencies was taken up by VASFA. Thus, VASFA got its status because of its service strength within the area and bargaining position with the organisations outside.

A three tier model appeared from the demands of tubewells as also modern agriculture. A single tubewell was too small a unit for an effective organisation. Its servicing needs could be supervised by a higher level zonal body. Since active farmers were short of time, smaller organisation was appropriate. It did not make too much demands. Besides, local politics could be managed better. VASFA could not look after day to day affairs of the tubewells since its change was substantial. It was looking after provision of support services in a range of activities. In effect then, irrigation was left entirely in the charge of the tubewell committee.

The first task was to identify a group of farmers who were willing to have a common tubewell, along with a farmer who was willing to have the tubewell on his land. Every landowner in the command was made a member of the tubewell committee as also VASFA. These members then proceeded to elect two office-bearers for the management of the tubewell. The Dalpati or group leader was charged with the responsibility of running and maintaining the tubewell and the channel. The Vyavasthapak or the organiser was to look after the supply of water to each plot in the command and was to control the accounts. A check and balance was thus introduced. These two elected members were authorised to appoint an operator. These three composed the executive committee that managed the tubewell.

The Zonal Committee looks after the overall development activities of VASFA within its jurisdiction. Its functions were wider than merely irrigation. Thus, it did not come in clash with the tubewell committee, it complemented and supported the work at the lower level.

These two informal levels were structurally linked with the duly registered VASFA and had legal status only through VASFA. The recognition of the tubewell group by the bank was only through VASFA. The additional funding was arranged by VASFA. The leadership of VASFA was recognised on the basis of services its rendered. The larger area of VASFA operations allowed it to undertake functions that tubewell committees could not conveniently undertake. All the three tiers had their functional jurisdiction carved out.

Functions

VASFA is not an irrigation development programme. It is a small farmers association, improved farming is its objective. Irrigation is the basic means of that improvement. VASFA and the replicated societies' aim at joint ownership of certain means of production as also undertaking provision of inputs and services for modern agriculture. As time passed, additional functions in the off farm sector have also been undertaken. By now VASFA function extends to a number of activities. These are:-

- (1) Integrated agriculture development programme.
- (2) Procurement, storage and distribution of purchased inputs. VASFA has undertaken agency of IFFCO, fertilizer manufacturing organisation in the co-operation sector.
- (3) Farmers service centre through a mechanical workshop, undertaking repairs of agricultural tools, implements, diesel engine, pump sets, tractors, etc. for members and non members alike.

- (4) Government sponsored activities of bio-gas, sanitary latrines, drinking water tubewell, rural houses. It has developed designs and specifications which are economical.
- (5) Training programmes under Trysem under Rural Development Deptt. as also programmes designed for its members in the field of modern agriculture, upbreeding of indigenous cattle, social forestry, etc.

The Association's functions have expanded to meet emerging needs. The Association considered itself a development organisation so as to meet the demand of the local rural community for farm and non-farm activities and to improve the quality of social life. However, the irrigated agriculture still remains on the top of the agenda more so of the zonal and village units and the Association has ambitions to saturate the area with tubewell irrigation. This expansion in irrigated agriculture is designed to promote further diversifications of functions.

Sustainability

VASFA has sustained itself since its inception in 1971. The construction of tubewells was completed in 1975 and it has continued to manage them for the last 19 years. In fact, it is during this period that the 15 more Associated Societies on the pattern of VASFA had come up, with 800-1000 families in each. PADI, the sponsoring organisation had set up consultancy cum-guidance centre in Vaishali in 1984 for undertaking advisory and training role for the members of the Association as also others. It has the needed infrastructure to take a quantum jump in its performance. The replication of the VASFA model has so far succeeded and all the 15 Societies are functioning. This sustainability of the experience has to be analyzed in terms of organisational, managerial and financial aspects.

The Society's structure is intact. However, the functioning of the democratic process is not as vibrant as in the initial years. The inter-action between the three levels has not evolved processes and patterns that generate motivation for leadership renewal, improved performance and measures for more income. The meetings of the Executive Committee of VASFA take place as and when required and not regularly to bring more tubewells and more agriculture with a vision to go forward. There has also been problems in the implementation of the tripartite agreements. The Association has realised this. It is in the process of a major review of its organisation. The short comings have emerged from this review. A structural change is under discussion.

The Association has tried elected managers. However, these managers are not uniformly motivated or effective. Good quality managerial leadership has not

been uniformly realised. Electoral process has not succeeded in weeding out poor leaders. Almost 50 percent of group tubewells are not functioning. Out of these 12 tubewells can be made operational with petty repairs, while 6 will require renovation/ resinking. The work is under process now. The elected managers have carried on routine work but have not been able to build reserves that can address renewal of tubewells and their effective performance. Elected managers can perform if the dual pressure of the constituents and the higher level units do more frequent internal appraisal and force renewal of mandate. Managers have to feel there is a challenge and reward. This complex issue in rural management has to be squarely faced.

The financial sustainability has been a remarkable achievement. The group tubewell does not receive any subsidy. However, the Association did not build a service fee concept in its operation that could establish a sound financial status and reserve for asset renewal and expansion. The low financial status of members was seen as deserving of state assistance. The deficits are presently being met from development grants from CAPART, and surplus from other activities. It is reported that the present deficit would be only Rs.32/- per family per year in case of VASFA tubewells and Rs.42/- for other tubewells. The farming families can surely meet this cost and provide some extra funds to go into a reserve fund. Presently, the Association has financial difficulties. However, it appears that VASFA has succeeded in generating more than Rs.21,000/- per year as service fees and public donations annually. The means for raising the level of this contribution exists and is under its consideration.

So far the Association has succeeded in retaining its identity, expanding its functions and continuing work. It has followed the development philosophy of the seventies when economic returns were as important as the financial return. The entire environment is changing. Group of asset owners and users must make adequate payment to sustain the asset. This can provide the incentive to control the managers, reduce maintenance costs and take steps to increase productivity and incomes from the assets of land and water. The Association will have to take note of the lessons learned in its operations so far and work towards strengthening sustainability further. The overall review of VASFA work now in progress has to take note of the changing perspectives of development during the present decade.

Lessons Learned

- (1) Even after working for long years, the expected attitudinal changes for self-dependence, social cooperation and integrity of purpose remain to be adequately realised. Motivational effort can achieve positive changes in the organisation at suitable intervals only if it is sustained and addresses itself to needed changes.

- (2) Lack of quality leadership can hurt operations in a multi-tier organisation. The umbrella organisation, such as VASFA, has not been able to force a change of such leadership. Innovative institutional approaches and incentives are required including internal evaluation of performances, mutual pressure and correction between various levels of organisation and clarity and consensus regarding process for renewal and replacement of leadership at various levels.
- (3) Expectation of continuing outside help is not practical for an organisation. Starting from initial financial contribution as in VASFA, the level of members contribution needs upgrading to meet increased costs. More exacting standard can be set only when outside assistance is supported by higher contribution by the members and their increasing vigilance on the activities of office bearers.
- (4) A NGO requires initial capital and managerial assistance. Government can provide for it or help through donor-assistance. The funds so generated, if used as a revolving fund, can sustain organisation through critical phase and provide resources to deal with emergencies. The fixed deposit with banks has done this in case of VASFA.
- (5) Too many formal tiers in the structure of a rural organisation is superfluous. Informal lower level units with formal links in the build up of the registered organisation provides for better management. An executive organisation can sustain better with a single registered unit.
- (6) Government provides the support infrastructure that cannot be easily replicated by others. A voluntary organisation can benefit by participation in such support services while expanding its activities to meet the demands of its members.

Outlook

The Association has undertaken reassessment of its performance. The more important task is to adjust to development objectives of the era of liberalisation. Irrigated agriculture has to pay more to sustain the organisation that is the instrument of periodic changes.

The advantages and disadvantages of a mix of formal and non-formal entities is designed to reduce conflicts, complexity and administrative work. The Associations formed so far are, however, considering a higher level Federation that can monitor the performance of each of these bodies, establish stronger control and conflict resolution mechanism, and ensure financial viability. This will also be registered under the Societies Registration Act. In fact, the VASFA and the 15 other Associations have been learning from one another through the links established by Shri K.D.Dewan who is working as an honorary consultant.

It is being considered to replace it by a formal institutional arrangement. A need based institutional arrangement for a larger number of Associations will be eagerly watched.

The village is a basic unit since every group tubewell falls within the jurisdiction of a village only. A village has more than one tubewell. The concept of the zonal organisation of approximately 5 villages was designed for proximate coordination, and quicker response to constituents felt needs. The formal organisation started with the willing villages and they have remained together. It is not clear why more villages in the administrative Blocks Vaishali and Saraiya did not join the parent Association.

The extension of functions of the organisation has proceeded on the basis of opportunities for participating in public sector rural development programme. It has not been self-evolving, in order to build entirely on the capability within the project area. This is an issue in which the Association will have to rethink its priority.

The Catalyst from the improved agricultural region of Haryana was found necessary to form the Association. The input required for VASFA was of a high order. It was much lower in the 15 replication projects. Additionally it can be said that Sri K.D.Dewan is more than a community organiser. He has now devoted his life in the area and such volunteers are very rare to get. Local leaders have been a support to Sri Dewan in carrying the message and in establishing new organisations. The message is clear that bulk of efforts has to emerge from within the area when organisation building is taken up. The association is seriously seized with the means and the pattern of leadership generation, selection, renewal and replacement.

Two decades is a long period to survive for a pioneering organisation. This has been a period of expansion. Tubewell irrigation, itself, has expanded manifold. In the command of the group tubewells also some private tubewells have come up. Problems of a new era have to be faced. The Association has done well to acknowledge it. It has marked out all the critical areas such as leadership, functions, finances, and is in the process of intensive discussion. The concept of such a major review periodically will no doubt add to sustainability.

Annex I

EXTRACT OF MINUTES OF MEETINGS OF TASK FORCE FOR ISPAN-SUPPORTED ACTIVITIES OF WALMI, PATNA

11 February 1994

1. For proper assessment and realisation of water rate, the Farmers Organisation will need certain training. Revenue wing of W.R.D. is ready to impart such training to representatives of FO. If needed, the farmers can be supported by the department for on job training for a period of one year.
2. Regarding number of field staff required for assessment and realisation of water rate, Director revenue administration was of the opinion that post of Amin should be combined with the post of Patrol. However, these field officers connected with assessment and realisation of water rate should not be imposed on the farmers organisation and it should only be made available if the FO make such requests.
3. Regarding the issue of adjustment of field revenue staff withdrawn from the pilot area after turning over the management to the FO, Director revenue administration opined that they can be easily utilised elsewhere. Even if this process of turning over the management to FO is adopted for the whole state as per government policy, it will require 10 to 15 years, during this period gradual retirement will take place and there seems to be no problem on the issue of adjustment of such revenue staff.
4. Apart from above revenue aspect it was opined that the Bengal Irrigation Act 1876 need not be changed and u/s 99 of the above act government is empowered to formulate new rules. For turning over the management of distributary to farmers organisation new rules will have to be formulated. The proposed new draft rule should be thoroughly examined by the Law Officer of WRD. If required, a representative from Law Department should also be consulted and invited in the Task Force meeting.

2 March 1994.

The period of lease should be for 10 years as considered in long lease. The amount to be deposited by the FO to the Government treasury shall be on the basis of average area irrigated during the last three years. However, the area actually irrigated by the system would be reviewed after 5 years and suitable decision on the question of progressive increase in the annual irrigated figure in

the command shall be taken. It is expected that after transfer of Management to FO the irrigated area will increase progressively due to better water management practices adopted by FO. However, increase in revenue collection due to increase in irrigated area by the efforts of FO will be allowed to be utilised by the FO as incentive for the initial period of 5 years, so that the same should be invested by the FO for improvement of physical system of network to deliver optimum results of irrigation.

16 March 1994

It was decided that law officer should examine the legal aspects of documents prepared by WALMI and ISPAN consultants such as MOA, MOU, OPC for Irrigation Water Management through farmers organisation and turn-over process thoroughly in consultation with Chairman. Now there will be no further formal meeting of Task Force.

The WALMI's team was entrusted to prepare the final copy of the above documents by incorporating all the modifications, corrections and decisions taken in the meeting by 25th March 1994 and to forward it to the law officer for his examination.

17 August 1994

The draft recommendations were taken para-wise and discussed in detail. Necessary modifications were suggested by participants.

9 September 1994

The changes made by the by the participants in the previous task force meeting were discussed and accepted.

The next steps were discussed at length. By and large, the chapter was accepted. A few modifications in different action points were suggested.

Annex J

WORKSHOP RECOMMENDATIONS ON FOs AND OPC

1. Farmer Organisation 18 June, 1994 at WALMI, Patna

(a) Need for FO

1. (i) FO is not an alternative but it is the only solution to water management in major and medium irrigation systems in the state.

(ii) Joint participatory management with the line agencies should be first brought about with informal FO for its eventual registration as a formal FO. This will facilitate a meaningful transformation to farmers managed irrigation system in the future.

(b) Promotion of FO

2. The State Irrigation Policy indicates FO for the Channel and Sub-Channel only. However, the workshop recommends that FO for bigger systems under Minor distribution System is necessary for promotion of FO.
3. The FO should not only be economically self-sustaining but self-generating. However, this should be considered on realistic basis. Government Budgetary provision is necessary for promotion of FO for which 5.00 percent of irrigation revenue may be earmarked.
4. Promotion of FO can be done by the farmers themselves with the support of CADA/NGO but since the irrigation department is the owner and administrator of the system, the responsibilities lie with WRD. This should be introduced as an item of work of WRD, under the Rules of Executive Business of the State.
5. The structural frame of FO should be a non-profit making service organisation.
6. (i) The workshop recommends that the assistance of voluntary organisation/NGO should be enlisted for organising the farmers as stated in the National Water Policy 1987. This role has to be different than that of a contractor.

(ii) WALMI will have to be strengthen organisationally and with professional manpower to develop training modules and organise adequate number of training programmes for the WRD personnel, for the formation of FO.

(c) Registration of FO

7. Registration is essential for legal entity.

8. Organisation of Minor or distributary level as decided by FOs should be registered under Societies Registration Act, 1860. The VLC may function as an unit of Minor Distributary level committee. WRD should monitor and extend support in registration of FO.

(d) Level & Tier of FO

9. The workshop recommends adoption of /and/of two-tier organisation at village level and Minor Distributary level (control point off-taking from Main & Branch Canal).

10. The concerning deptt. should interact with respective level of FO.

(e) Sustainability and Incentive to FO

11. Financial sustainability is a must for a FO.

12. Loan as and when required may be sanctioned to the FO by the Financial institutions with the support of the line agencies/ CADA which will also assist in recovery of loan from the FO.

13. Organisational support from the line deptt. should be extended to the FO to the extent they desire which should be gradually withdrawn in about 5 years.

14. The deptt. will provide the technical know-how, as and when required by the FO plus ensure reliability, timeliness adequacy and equity in the supply of water at the regulator of the control point.

15. Selection and training of sincere selfless and committed worker within the jurisdictions of FO is a must for the sustainability of a FO.

2. Organisational and Procedural Changes

19 June 1994 at WALMI, Patna

1. The workshop recommends that major changes in Law procedure and organisation can be initiated when sufficient experience in working with FOs have been obtained. However, it is of utmost importance that procedural hurdle that have been identified in working with FOs in ARP areas should be taken up for immediate rectification. A turnover should be implemented immediately after the FO is willing to take up the responsibility on as is where is condition. Improvement in or updating of the system should not be allowed to be a precondition for transferring the system for FOs management.

2. The workshop recommends that the responsibilities of Water Resources Department should include the following:

- (i) To oversee and ensure regular meeting of DLC,
- (ii) To train the FO for preparing operation plan and oversee its implementation,
- (iii) To participate with the farmers in assessment of maintenance and repairs required and prepare estimates.
- (iv) To conduct performance testing of the canal system,
- (v) To assist in revenue assessment and preparation of demand,
- (vi) To assist in coordination of the different department for other inputs towards increasing productivity.
- (vii) Suitable amendments in the duties of the field functionaries of the line department should be made. If necessary government may like to consider creation of a task force to achieve these objectives.

3. The workshop recommends that the FO should be given a rebate of 5% on timely payment of irrigation water rate and side by side a penalty of 5% should be levied for late payment as is the practice in other states.

The FO should not be entrusted with the responsibility of collection of arrear water rates before the transfer of management. If mutually agreed the concerned parties may enter into separate agreement for collection of arrear of water rate.

4. The workshop recommends that the FO should be left free to collect suitable service charges as decided by them.

5. The workshop feels that as recommended in the National Water Policy the involvement of Voluntary Organisation/NGOs should be taken for promoting farmers organisation and training farmers representatives.

6. The workshop feels that WALMI should motivate the line staff and train them in bringing attitudinal changes from the administered system to the regulatory role and in the formation of farmers organisation.

7. The workshop recommended that the primary duty of collecting and sending information/reports etc. should be of the line deptt. at the appropriate level.

8. The workshop recommends three tier committee for implementing and monitoring the National Water Policy and State Irrigation Policy with regard to involvement of FO in Water Management.

- (i) Top level committee under the Chairmanship of Chief Secretary with departmental heads of WRD/Finance/Minor Irrigation/CADA/Agriculture/Rural Development.
- (ii) A regional committee headed by Chairman CADA with departmental heads of the above mentioned departments.
- (iii) The third level committee should be at distributary/ minor level where FO is being formed headed by S.E. of that area and field officers of the concerned deptt. and representative of concerned FO.

At Secretariate level there should be a senior officer exclusively for promotion of FO.

The functions of the committee should be defined further by Government of Bihar, wherever appropriate, representative of FO, NGO should be associated in these committees in due course.

9. Primary objective of WALMI is to provide improvement in Land and Water Management for which, it is ill equipped. Now role of WALMI has acquired special importance and expertise in promotion of FO for which it should be strengthened and provided with a multidisciplinary team as core faculty. Separate programme fund and project fund should be made available to WALMI by WRD and matching assistance obtained from the four CADAs.

WALMI should develop modules for training of -

- (a) Farmers,
- (b) Line Agency,
- (c) Other departments concerned with irrigated agriculture and start training them.

The other important role of WALMI will be to assist the line agency with the help of Voluntary Organisation/NGO or others for extending FOs coverage in other parts of the state.

Annex K

ENGLISH VERSION OF GUJARAT GOVERNMENT RESOLUTION REGARDING CONSTITUTION OF A STATE LEVEL WORKING GROUP

Joint Irrigation Management and
Development with Government and
beneficiary farmers partnership
Appointment of State Level Working
Group.

Narmada and Water Resources Department
Government Resolution No. PGT-1093/2/k.3
Sachivalaya, Gandhinagar
Dated 22nd March, 1994

PREAMBLE:

Considering the need of feasible and optimum utilisation of the irrigation potential, being created after capital investment and expenditure on major, medium and minor irrigation schemes in the different parts of the State and thereby to increase the level of productivity stagewise, it has been experienced so far that the applicable aspects, like process from sanctioning irrigation applications up to the stage of irrigation recoveries, increasing O&M expenditure every year towards maintenance, repairs and management requirement, problems of unauthorised irrigation; satisfying the problems and requirements for the beneficiary farmers, it was considered since past few years to take cognizance of the experience gained in this matter in other States, recommendation and advice given by GOI and also considering the experimental and pilot level schemes undertaken in the Gujarat State during last 3 years with the involvement of the locally available reputed non-Government Organisations with the principle of government and beneficiary farmers partnership towards participatory approach development in the first instance, followed by obligations and responsibilities to be fulfilled by the either side under specific Memorandum of Understanding, thereby encouraging and developing joint irrigation management on the irrigation schemes and systems, and ultimately based on actual experience to adopt policy matters, results and issue of the Government Orders was under considerations of the government.

A consultation workshop was organised during February, 93 at WALMI, Anand for careful considerations and making appropriate recommendations. Representatives from GOI, Government of Maharashtra, NGOs, farmers cooperative irrigation societies, educational institutions, experts Mr. Benjamin from Philippines, Ford Foundation, European Economic Community and officers from the State Government participated in the above consultation workshop. Based on the recommendations in this workshop, suitable considerations and process at Government level was initiated.

It has not been possible for the State Government to increase the existing irrigation rates for providing irrigation facilities on different irrigation schemes at present even though such an increase in the water rates have become obvious; however, due to one reason or the another, neither the increase in the water rates nor the method of supplying irrigation and measurements of the same for the irrigation recoveries purpose could be enforced. On the other hand, in private sectors, farmers either individually or through organised groups bear all financial liability and capital expenditure for creating the facility of irrigation for them and thereafter bear all expenditure toward O&M services. In reality, compared to the surface irrigation facilities controlled by the State Government through major, medium and minor irrigation schemes and the irrigation water rates in force at present, farmers in private sector underpay high capital expenditure and cost and corresponding high irrigation rates through their own irrigation facilities. Farmers ensures high productivity with security through their own assets.

Farmers appreciate irrigation and water facilities if assured of such facilities and are prepared to pay appropriate high water rates considering the surety about productivity. Such a situation to be acceptable to the farmers, it is essential for the irrigation scheme and facilities to be efficient and competent in all respects such that beneficiary farmers could be served with sufficient and timely irrigation facilities on the basis of equality with full assurance, Recommendation and deliberations for the National level seminar held at Hyderabad during February, 92 stipulates and suggests to adopt and develop partnership between government and farmers for the purpose of joint irrigation management as a effective alternative and necessity toward irrigation management, O&M responsibilities etc. In addition for Narmada project, considered to be the life-line of the State, it has been considered and planned to adopt and regulate a policy for the irrigation potential to be available from Narmada project, to supply irrigation facilities to the group of regularly registered farmers at the village level and not to consider or provide irrigation facilities from Narmada project on individual farmer basis. The related aspects like irrigation recoveries and measurements of irrigation supplies and other requirements is proposed to be implemented on this policy for Narmada project.

RESOLUTION:

After careful considerations on the subject, Government is pleased to appoint a **State Level Working Group** as below for implementing the above principle as a policy of Government on equitable and widespread basis involving registered water users associations of beneficiary farmers in partnership with State Government, for encouraging and developing joint irrigation management policy and ultimately turning over all responsibilities for irrigation management and operations including O&M requirements.

- | | |
|--|----------|
| 1. The Chief Secretary, Gujarat State | Chairman |
| 2. Shri S.K. Shelat, Principal Secretary Finance Department, Gandhinagar. | Member |

| | | |
|-----|---|-----------------------------|
| 3. | The Additional Chief Secretary, Agri. Coop and Rural Development Department | Member |
| 4. | Additional Chief Secretary, - Panchayat and Rural Housing Department | Member |
| 5. | Secretary (Planning), G.A.D. | Member |
| 6. | Secretary, N and WR Department | Member |
| 7. | Chief Engineer (Panchayat) and Joint Secretary | Member |
| 8. | Chief Engineer (CAD) & Joint Secretary N and WR Department | Member |
| 9. | Shri Anil C. Shah, Principal Advisor AKRSP(7), 8, Jupiter Apartments Sardar Patel Nagar, Ahmedabad-6 | Member |
| 10. | Commissioner (CAD-Water Management) Ministry of Water Resources, Krishi Bhavan, GOI, New Delhi | Member |
| 11. | Dr. John Ambler, Programme Officer Ford Foundation, 55, New Delhi-110003 | Member |
| 12. | Chief Engineer and Director WALMI, Anand | Member |
| 13. | Shri Harnath Jagavat, Sadguru Sewa Trust, Dahod, Panchmahal | Member |
| 14. | Shri K.C.B. Raju, Vivekanand Research Foundation, Mandvi, District: Kuchh. | Member |
| 15. | President, Jeevandip Co-op. Society Zarnawadi, Ta, Valia, District: Bharuch (Pingot Irrigation Scheme) | Member |
| 16. | President, Baldeva Irrigation Cooperative Mandli, Ta, Valia, District: Bharuch | Member |
| 17. | Chief Engineer (D) and Joint Secretary N and WR department. Gandhinagar | Member Secretary |

Above State Level Working Group will consider following aspects for realistic and streamlined process in decision making and enable issue of the Government Orders for speedy implementation of the programme:

1. Consideration for issuing policy resolutions of Government based Farmers-Government partnership in joint irrigation management and turnover policy.
2. To consider pilot project schemes in the different parts of the State and needy areas in the first instance as an experimental learning experiences and development.
3. Requirement of community organisers with the cooperation of NGOs for the farmers associations and their developments; through useful and willing officers/employees from different departments of State Government. Side by side to motivate and encourage useful and willing officers/ employees from different government departments for the purpose.
4. Finalising terms and conditions for the model Memorandum of Understanding (MOU) to be adopted and followed by both the partners during transition period up to actual turnover.
5. Finalising terms and conditions for the Bye-laws to be followed by the farmers association after the irrigation management and maintenance responsibility is turned over based on applicable legal provisions and act applicable in the matter.
8. To consider priority requirements and policy to be followed against the demands from beneficiary farmers associations in case of completed or ongoing irrigation schemes for special repairs, improvement works or system rehabilitation etc. where beneficiary farmers and the concerned NGOs are ready to contribute some amount towards capital expenditure for the purpose.
7. Consistent with the participatory policy and programm considered by government and with a view to develop the programme on long term and sustainable basis with the cooperation and partnership of the farmers associations suitable restructuring of the organisations and activities of N and WRD including required administrative measures and implementation.
8. To consider administrative measure and incentive policy for the organisation engaged in actual implementation of the programme where positive result and implementation has been established with the confidence of the farmers associations during the transition period fulfilling the requirement of MOU etc.
9. Finalising criteria and general policy for appropriate training, demonstration and action research activities etc. for the farmers organisations, representatives of NGOs and officers/employees of different State Government departments towards achieving the desired results for the participatory programmes.
10. Considering the educational, administrative organisational and other functional requirements of the setup at WALMI, Anand for the purpose of coordinating nodal agency with regard to training, demonstration and action research requirements.

11. Arranging for preparation of appropriate manuals and guiding principles and literature for the stagewise and effective implementation of the government policy and programme of farmers-government partnership towards joint irrigation management and ultimately turning over irrigation management, maintenance and operational responsibilities to the farmers associations with reference to the actual experience in other Asian Countries like Philippines and experience of other State in India.
12. Considering the requirement of an independent evaluation and monitoring agency for the purpose of process documentation and research basis through experienced experts or consultants, scientists or educational institutions for the effective implementation and development of the government programme along with the appropriate government decisions for the purpose.

Above State Level Working Group will also consider and setup Subcommittee or Task Force for separate and careful considerations and examinations towards policy matters and programme implementation requirements. In addition, the State Level Working Group will also consider additional proposal, norms and regulations consistent with the participatory and turnover programme of government.

By order and in the name of Governor of Gujarat.

M.G. MAKWANA
Officer on Special Duty (IP.1)
Narmada and Water Resources Department

Copy submitted with compliments for information to:

1. PA to Hon. Chief Minister, New Sachivalaya, Gandhinagar.
2. PA to Hon. Deputy Chief Minister (WR), Sachivalaya, Gandhinagar.
3. PA to Hon. Chairman, Sardar Sarovar Narmada Nigam Limited, Block-12, Sachivalaya, Gandhinagar.
4. PA to Hon. Minister, Minor Irrigation, Sachivalaya, Gandhinagar.
5. PA to Hon. Minister (State Level), Water Resources, Sachivalaya, Gandhinagar.
6. PA to Hon. Minister (State Level), Minor Irrigation, Gandhinagar.
7. PA to Chief Secretary, Sachivalaya, Gandhinagar.

8. Shri B.N. Navlawala, Adviser, (I and CAD), Planning Commission, Government of India, New Delhi.
9. Principal Secretary, (Finance Department), Sachivalaya, Gandhinagar.
10. Additional Chief Secretary, Agriculture, Cooperation and Rural Development Department, Sachivalaya, Gandhinagar.
11. Additional Chief Secretary, Panchayat Rural Housing Department, Sachivalaya, Gandhinagar.
12. Secretary (Planning), General Administrative Department, Sachivalaya, Gandhinagar.
13. Secretary (N and WRD), Sachivalaya, Gandhinagar.
14. Financial Adviser (Irrigation Project), N and WRD, Sachivalaya, Gandhinagar.
15. Financial Adviser (S and C), N and WRD, Sachivalaya, Gandhinagar.
16. Shri M.T. Pathak, Narmada Planning Group, Block No.12, Sachivalaya, Gandhinagar.
17. All Superintending Engineers under Narmada and Water Resources Department.
18. All Collectors (Gujarat state).
19. All District Development Officers (Gujarat State).
20. Registrars, Cooperative Societies, Dr. Jivraj Mehra Bhavan, Block No.10, Old Sachivalaya, Gandhinagar.
21. All District Registrars (Cooperative Societies).
22. The Chief Executive, Agha Khan Rural Support Programme (India), Choice Premises, Navrangpura, Ahmedabad-380009.
23. Shri M.N. Lath, Commissioner, CAD Programme, Ministry of Water Resources, Room No. 236, Krishi Bhavan, New Delhi.
24. Dr. John Ambler, Programme Officer, Ford Foundation, 55, Lodhi Estate, New Delhi-110003.
25. Area Development Commissioner, Surat, Ahmedabad.
26. Managing Director, Ground Water Resources Development Corporation, Gandhinagar.

27. Shri Harnath Jagavat, Sadguru Water Development Foundation, Plot No. 71, Near RTO Naka, Dahod, Dist. Panchmahals-389151.
28. Shri K.C.B.Raju, Vivekanand- Research Foundation, Bindra, Taluka Mandvi, Dist. Kachh - 370405.
29. President, Jeevandeep Cooperative Society, Zarnawadi, Tal. Valia, Dist. Bharuch.
30. President, Baldeva Irrigation Cooperative Society, Taluka. Valia, Dist. Bharuch.
31. The Executive Engineer, Minor Irrigation Project Division, Ankleshwar, Dist. Bharuch.
32. The Executive Engineer, Ver-II Project Division, Vyara, Dist. Surat.
33. Programme Coordinator, Agha Khan Rural Support Programme (India), Netrang, Taluka: Valia, Dist. Bharuch.
34. Select File.
35. Assistant File.

Annex L

SUMMARY OF PROCEEDINGS OF WORKSHOP ON BIHAR REPORT ON FO AND OPC ON 23.9.1994.

Bihar Water Resources Department had convened the Workshop to be presided over by the Minister, Water Resources Department. The invitees were the related departments of the State Government, Senior functionaries at the headquarters, chief engineers from the field faculty of WALMI and Water Resources Centre, Patna University as well as experts in irrigation. This workshop followed rounds of discussion of the report in the Task Force in the Water Resources Department on the various aspects of the Draft Report.

The Minister for Water Resources Department Mr. Jagadanand provided the guidelines for the Workshop. In his speech he emphasised that a critical stage had been reached in the performance of irrigation systems. These were the lifeline for generating rural growth and everyone involved has to feel equally concerned about the situation. The choice was between suicide and the will and the audacity to change. In this scenario the ISPAN study had provided valuable lessons. This should be studied as the starting point of a change process. Further changes and modifications would, no doubt, be needed. We have to be determined, however, to reverse the present trend in helplessness to improve management.

The Minister put special emphasis on a number of other important considerations that should guide a discussion of the subject under consideration. Firstly, it is necessary to realise why governments are talking of participatory management of irrigation while farmers are passive to this call. Why is there no demand that systems should be given under their management. Secondly, engineers have done excellent work. The younger generation of engineers have potentials for higher performance. And yet, they find, themselves, helpless to prevent damage to the system or to deliver the designed benefits up to the last promised field in the command. Thirdly, the irrigators are also an unhappy lot and put the blame for all their problems on the system managers. The upper reach farmers misappropriate more than their due allocation of water but crop productivity increases are not very high. The lower reach farmers, in Paliganj for instance, were denied their due share for years running. They have no answer. Fourthly, there was farmers participation within the framework of the Bengal Irrigation Act up to the decade of the fifties in the Sone Command system. The farmers cooperated in distribution of allocated water, they repaired farm irrigation conveyance system and they helped punish those not accepting discipline. Given the clear understanding of their obligations, they performed their role well and effectively. Finally, there was return to the system from the levied water charges. The realisation was almost hundred percent. Now, there is delivery of more water from the Sone system and all

this virtually free for those farmers who waste water or draw more water than is their share. There is no relation between expenditure and income. The WRD is spending almost two billion rupees on establishment alone but return from water charges was hardly 100 million rupees. These are the facts on which we must ponder. We cannot run the system without the system managers and system users becoming equally aware of the consequence. Participatory management holds answers to get out of the present dilemma. Efficient, effective, enforceable user-oriented, economic return related systems management is possible and desirable only through a collaborative arrangement between the organisation of system managers and that of the system users. System users organisation and support for its sustenance may yet provide the alternative we are searching for and I commend to you to discuss the matter today in this background.

The discussions that followed brought in the following important suggestions for follow up:

1. There was no alternative to participatory management. User understanding and cooperation was an essential ingredient for user satisfaction and systems performance. Forms may differ but the necessity of participatory management should become part of irrigation system development in all phases.
2. The government approach and programme should focus specifically on promotion of farmers organisation and its capability building. However, FO should not be thrust on them but should evolve from the motivational measures undertaken. This will wardoff infant mortality in FOs.
3. There should be no expectation of a very rapid expansion of the movement towards management transfer. It will be a slow process. The success of a few pilot projects should not force mass scale expansion. A gradual expansion after preparation by systems managers and FOs will ultimately yield more durable results.
4. It is necessary that government policy and programme for participatory management and the form it will take is given widest publicity. Simultaneously, there should be greater transparency in the dealings of Departmental officers with the farmers and their organisation. Transparency rather than high promises will bring about an environment of trust and cooperation between the two partners.
5. As a first step, workshop of the nature being held, should be organised in the jurisdiction of each chief engineer of major, medium, and minor systems of completed projects to make operation level functionaries aware of the task. NGOs and FOs within that jurisdiction or outside should also be invited to such workshops.

6. FO will be a major instrument in securing government funds also through raising hue and cry about neglect. The bargaining power of FO will help irrigation management in totality.
7. Participatory management is suitable in all categories of projects. Details have, however, to be worked out and precautions taken to avoid chances of misunderstanding to the extent possible between irrigation functionaries and FOs.
8. Minor Irrigation department has already transferred state tubewells and lift irrigation schemes to Panchayats. However, casual feedback suggests this is not working. An approach to user management may have to be evolved.
9. Who should be the promotional agency for FO? There was no easy answer considering the magnitude of the tasks involved. Apart from WALMI and other identified agencies, the matter should be put on the agenda of district level task force as also 20 Point Programme Implementation Committee and DPDC for appropriate consideration in each district.
10. Further consideration should be given to jurisdiction of FO as also levels. Micro to macro approach should not be completely ruled out. The important criteria worked out, namely, control of FO at a central turnout point, role of farmers themselves in organising farmers, homogeneity of technical problem within a given system, manageability of socio-cultural relations should be kept in mind. It was noted also that thousands of farmers organisations/ cooperatives have been formed in the country in the last two decades but the federating process that could make them work and provide stability has not even started yet.
11. There will be problems of different kinds compared to Paliganj in Chotanagpur region. ARP as also pilot projects should be undertaken in that region also to workout modalities of FO management.
12. Pilot projects should also be taken up in MI/STW/LI to workout modalities for FO making a success of government policy of management transfer.
13. The purpose of irrigation is to maximise production. All the elements including input supplies, technology, and extension should be included in FO functions. However, care should be taken not to overload them with activities before they have developed competence. Initial attention should be devoted to improvement of irrigation. Once FO become strong they will be able to secure all the needed support services for irrigated agriculture and higher productivity.

14. The irrigation system managers are afraid to face farmers due to poor state of canal systems. This will require a satisfactory arrangement by which at least a minimum level of repair and improvement is arranged before a system is formally transferred to FO for management.
15. Training in WALMI is essential for line Agency as well as formers to acquaint them about the demands and discipline of changeover. WALMI, specially its core faculty should be suitably and urgently strengthened to undertake that responsibility.
16. The graduate course syllabus of Irrigation in Engineering Colleges should include FO concept and management as also farmers managed irrigation systems. Farmers joint participatory management should be specially emphasised since FO as such is part of the syllabus. This will facilitate the task of WALMI.
17. One major weakness of the Report is the lack of factual data on irrigation revenue transfer. In Paliganj the FO has desired to have this responsibility for long but actual transfer has not taken place. However, in spite of risks foreseen, a change will bring beneficial results. Maharashtra experience proves that Bihar is already simplifying some of the procedures and this will further facilitate management of this work by FO successfully.
18. Water Resources Department budget does, in fact, have a 'research head' but the allocation is confined to Irrigation Research Institute, Khagaul only. There should be two sub-heads under this Head, one for Technological Research and another for Irrigation Management Research.
19. Technical support may be required by FO on a continuing basis and should be withdrawn only when it so desires after making alternative arrangement.
20. The Steering Committee at the level of Chief Secretary should be set up early. It should have full powers to authorise any legal authority to provide registration to FO.

The Workshop deliberated at length on the recommendations of the draft report. It did not express any doubts about the workability of the enterprise as outlined in the Report. It was pointedly brought out that one should not assume and take up worst cases to prove or disprove a point in this regard. One should perceive and talk about the average cases. That can provide a sound basis for proceeding with a programme that can be constructively monitored and evolve into a continuing programme. The workshop was optimistic that proposed changeover would be sustainable. If VASFA could achieve success why not the other systems?

Annex M

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